



IDS Document Management and Workflow Project Assessment Methodology

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Introduction

Integrated Digital Systems/ScanAmerica, Inc (IDS) is an expert at solving complex document management and workflow problems by developing solutions that are built upon industry experience and proven technologies. We have integrated document management and workflow



systems in both large and small scale customers in the areas of case management, land records and surveys, environmental permitting, banking, K-12 and higher education, manufacturing, federal state and local government, healthcare, telecommunications, and in other major markets. Based on our 10 years of implementation experience, IDS is able to provide its clients with practical working knowledge combined with document management and workflow technology

experience that is effective and affordable. The Goal of our methodology process is:

- improved productivity and operational efficiencies
- expanded document centric controls and streamlining
- tight integration with Microsoft, Xerox, Fujitsu and Edge products
- strong organizational and individual accountability
- rapid access to information and process intelligence
- rejuvenation of legacy investments and strong process ROI

BPI – Business Process Improvement – has been defined as “the critical analysis and radical redesign of existing processes to achieve breakthrough improvements in performance measures [such as cost reduction, time reduction or quality improvement].” A 100% paperless environment is virtually impossible to achieve, it’s a myth”.

BPI is not Organizational Transformation (OT), which refers to the broad issues of an organization’s strategic, structural and business change. BPI can, however, facilitate and contribute to Organizational Transformation. BPI is not Change Management, which refers to planned, managed and systematic situational change – often in response to external changes over which the organization exercises little or no control. BPI draws on various Change Management strategies and techniques in order to implement its results. BPI requires taking a broad view of both information technology and business activity, and of the relationships between

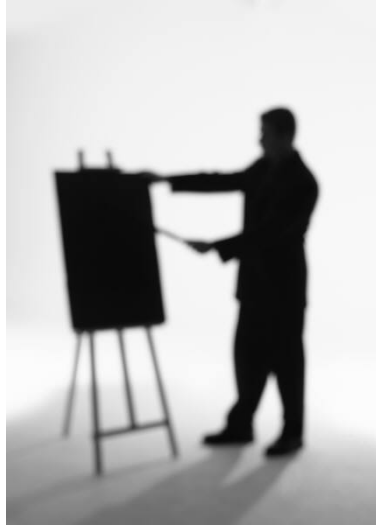


them. Information technology should be viewed as more than an automating or mechanizing force: it can fundamentally reshape the way business is done. Business activities should be seen as more than a collection of individual or even functional tasks by taking a process view to maximize effectiveness.

Information technology and BPI have a recursive relationship. Information technology capabilities should support business processes, and business processes should be developed in terms of the capabilities which the enabling technology can provide.

About Our Project Methodology

IDS has developed its own Business Process Review Methodology (BPRM) specifically designed for document management and workflow solutions to provide our customers consistent quality and based on experience/results. Our BPRM is used directly or indirectly on all of our projects. Included in this methodology are the project management, business analysis and flow designs, system implementation, testing and quality assurance, change control, and implementation strategies. The components of IDS' project methodology which guide us on every system we implement include:



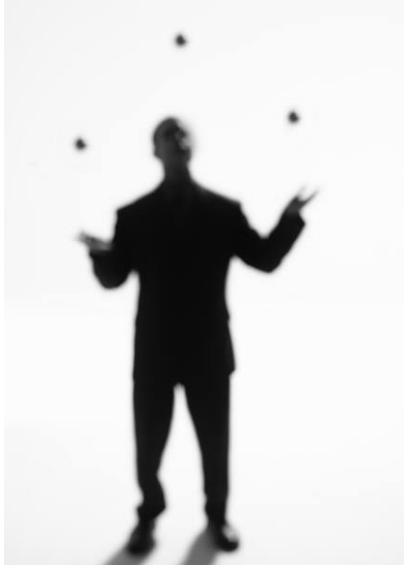
- project management
- progress monitoring and reporting
- manual process infrastructure assessment
- business requirements and process definition
- document management and workflow design
- business procedures and process flows documentation
- flow template development and unit testing
- system metadata and schema design
- system implementation
- user acceptance testing



- end-user training

Project Management

At IDS, we believe that one of the critical success factors in a project is the quality of the project management and the administration of the project team members. A well-managed project uses a structured approach where the project is planned out to clearly identify roles, responsibilities, task assignments, deliverables, communication methods, and acceptance criteria. These factors are



critical in mitigating the risks associated with the implementation of document management and workflow systems. IDS uses Microsoft Project Enterprise Server with web enablement to manage project timelines and benchmarks.

Project Teams

IDS' project teams bring to each project not only expertise in the document management systems integration area, but practical working knowledge as well. IDS' project teams have the skills and experience needed to successfully perform all project roles and may consist of individuals from suppliers, partners and consultants. We are experts in the key disciplines required for the project including project management, work process re-engineering, and workflow and document management system development and implementation activities. Additionally, we work closely with our customer to analyze, design, develop, train and implement a solution that best meets their strategic business and financial goals. This approach allows us to form a partnership with our clients, while enabling client self-sufficiency through knowledge transfer and hands-on training.



Project Communication

Open and thorough team communication is one of the critical success factors to any project. At IDS, we believe it is important for our clients to understand the progress of the project at all times. To ensure this, on every project we have ongoing informal and regularly scheduled meetings with appropriate client staff members. Both the IDS and client

project team members are encouraged to share information with the entire team to ensure that everyone has a working knowledge of the project progress, issues and timelines.

Written communication provides an audit trail of the progress, issues, and risks on the project. As part of our regular team communication, IDS weekly updates project status within the project management software that documents the accomplished tasks and date of completion; scheduled items that could not be completed and the reason; upcoming tasks; areas of concern or outstanding issues; budgetary items; and project schedule impacts or changes. This information is shared with our client management through the web interface to ensure that they have a thorough understanding the project progress.



Project Planning (Statement of Work (SOW))

A good project plan provides a framework by which tasks are managed, monitored and accomplished during all phases of the project and acts as a SOW. Each of the project assignments are administered and monitored in accordance timeframes identified in the project plan.

Included in each project plan are the following:

- classify customer type
- project staffing and resource assignment for each task



- project milestones and deliverables
- product and service requirements
- document overall business purpose
- vision and Mission
- overall measurable objective(s)
- determine Critical Success Factors (CSFs)
- develop operational objectives
- develop strategies
- set targets
- develop implementation action plans

As part of the management of the project, IDS monitors and maintains the project work plan to ensure that it reflects the customer's defined scope and goals, and keeps the entire team informed as to the project progress and direction.

Quality Assurance Reviews

At IDS, it is our standard practice to review all deliverables produced by the project team to ensure that all items delivered will be of the highest possible quality. At defined points in every project, IDS conducts an internal project review to discuss scope and direction of the project; allocation and use of project resources; project strategic direction; areas of concern; opportunities for growth; technological and software issues; and other related topics.

These meetings will be held off-site with IDS senior staff and project members.



Business Process Analysis and Design

Throughout the project we work closely with our customer to analyze, design, develop, train and implement a solution that best meets our client's business and financial goals.



Business Process Analysis

During the business requirements and analysis phases, we conduct a series of interviews and working sessions with our client's business users to better understand their manual processes, work assignment and document distribution needs, internal and external routing requirements, business forms and usages, system security, document retention and legal reporting requirements, system performance expectations, operational or logistical concerns, legacy integration needs, paper volumes to be converted and other related items. Our interactive working sessions are intended to solicit the business process information from our clients, while we assist the client understand the capabilities and features available with document management and workflow technologies.

Solution Design

Since incorporating a document management and/or workflow system into an organization re-designs the way business is conducted, it is important that the system design decisions be considered strategically rather than simply as technical solutions. This provides an opportunity to take a fresh look at the existing business practices, flow of information, and infrastructure to determine how these items can be optimized. During the project, IDS assists the client to understand and recognize the inefficiencies in their current manual processes. We then re-engineer the paper-based processes to employ more efficient work practices and better utilize the automated features available in the document management and/or workflow system.

Using the information from the Business Process Analysis sessions and client's business requirements, IDS can design a solution to incorporate data, documents, legacy systems and automated processes into a comprehensive and maintainable document management and workflow system. We review the design with our clients to ensure that it meets the business, strategic and financial requirements of the organization.



Workflow Systems Development

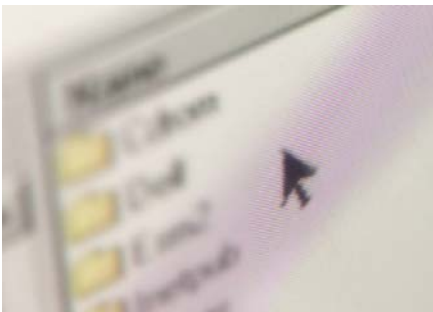


IDS Edge Workflow application was developed, to facilitate software maintenance and compatibility throughout the system's lifecycle.

The program naming conventions, standards, error handling, directory structures, etc. are non-proprietary and follow Microsoft pre-defined application development policies. Programming standards are used for all applications development and include the following:

- program and data field naming standards
- structured programming conventions
- system edits and program verification methods
- common error handling
- standard log on to database and Edge server components
- integration of online help
- use of version control software
- code reviews of developed software, database tables, and system integration components
- unit test process and criteria for acceptance
- method for program migration to system test environments

Testing



The purpose of testing is to validate that the document management and workflow components meet the business requirements document management requirements and process flow design specifications. Most of our projects involve two levels of testing: (1) system/integration testing, and (2) user acceptance testing. Both testing levels require a well thought out and communicated test plan, and



continuous management. Together these techniques ensure that all participants understand the test goals, test activities, timelines, and acceptance criteria. For both the System/Integration and User Acceptance Test cycles, the IDS assist its customers in carefully planning the following items:

- identify a flow template that includes goals, timelines, roles and responsibilities
- establish a test environment
- identify test participants and assign roles and responsibilities.
- manage timeframes to develop and write test scripts
- define test criteria and method of acceptance
- establish timeframes for conducting and completing the test
- load test case data into the testing environment
- devise a process for tracking and re-testing failed test scripts
- determine system acceptance criteria and approval processes

Training and Documentation

Implementation of an integrated document management and workflow system changes the way an organization conducts its day-to-day processing activities through the digitization of manual processes. As a result, end-user training must not only define the software features, but manual and procedural changes as well. End-user training serves many purposes: (1) prepares users for acceptance testing and final implementation; (2) provides business users with an understanding of system functions to enable them to complete their day-to-day work assignments, and (3) identifies procedural and organizational changes. IDS will provide the client with as much or little mentoring and assistance in planning, developing and executing the document management and workflow system end-user training as needed. Items that need considered for successful implementation of a content management and workflow system includes:

- establish a training plan that defines timelines, roles, responsibilities, and participants i.e.; IDS lead or a train the trainer scenario.
- evaluate use of onsite classroom versus offsite classroom training
- define end-user training objectives for the courses being taught



- identify attendees per class session, training dates and times
- training materials
- use of training evaluation forms
- use of online help files
- deliver ongoing training for new system functions/features, and employee position changes

Implementation Support Services



IDS assists its clients with maintaining the operational stability of the system during the design, testing and training phases of the project.

IDS believes that involvement by client's IT staff is critical throughout the project. This approach provides an opportunity for our clients to develop sufficient expertise to assume full responsibility for operations

and administration of the document management and workflow application. Items we cover with our customer's IT staff include:

- installing and configuring server components in designated environments
- establishing and change user security profiles
- being familiar with system architecture, workflow and document management application components, and database tables
- using workflow administration utilities to monitor and correct system problems
- understanding system maintenance terms and agreements
- logging and reporting system errors
- upgrading server components and installing system corrections ("software patches")

Change Management Procedures

Change Management is the systematic process by which changes to the business requirements, design items, or development activities are tracked, analyzed, and evaluated to determine project impact. On each project, one of IDS' initial project activities is to work with our client to establish Change Management procedures. These procedures define how changes will be identified, defining the cost and scheduling impacts of requested changes, understanding how the requested change impacts the project scope/timeline and evaluating which changes are



appropriate for inclusion in the project. Changes and system enhancements are tracked using a project-tracking log.

System Enhancements

Analyzing and defining document management and workflow systems is best performed on an iterative basis; where after a period of use, users identify and recommend modifications and enhancements to the original design. Items identified outside the project scope or as changes to the design, screen layouts, data, technical specifications, etc., are handled as a system enhancement. For each identified system enhancement, additional cost may apply; prioritization for completion of the design, development, testing and implementation schedules will need to be arranged and negotiated between IDS and its customer before work on the enhancement commences.



Continuous Process Improvement Model

Applying Basic Analysis Techniques in the IDS BPRM

Eventually all this business process information is described or depicted in models or representations that illustrate, usually through the use of process symbols, the various components and relationships of the processes. Models designed to depict the system independent of any technical implementation are known as logical models or essential models. Of the various types of logical models, it is the opinion of IDS that the most valuable models are those that focus on system processes, specifically business function decomposition diagrams, business event diagrams, and business process data flow models. In the IDS BPRM methodology, staff typically creates functional decomposition and business event diagrams.





Even in initial phases we were concerned about the level at which the review and analysis of information systems would occur. We recognize that if every record or item had to be reviewed to determine if the requirements and specifications were met, the strategy would simply not work. Just as with paper records, we realize that you have to find a way to manage electronic records at the aggregate level. Emphasizing the necessity of incorporating classification schemes into a document management system is extremely important. With a robust classification system in place, you could then begin to manage records as groups, as files or classes of files. The next problem how this will work in practice as stated in functional requirements and metadata specifications require analysis at the record level, which can be applied at the level of a file or a class of files.

The Functional Requirements are system level requirements, and therefore are meant to be applied at a much higher level than the individual record. In other words, when applying the Functional Requirements the analyst will begin by reviewing and analyzing how the requirement is met at the highest-level sub-function for the business function under review. If during the analysis it becomes clear that the records produced in the course of completing lower-level sub-functions are captured and managed differently than the records of related sub-functions, the analyst will then proceed to analyze the records at the next lower level. Once this difference is discovered, the analyst would immediately adopt a strategy of reviewing separately the products of business processes for each of the lower-level sub-functions. Similarly, if different procedures are undertaken at the level of the business transaction, then the analyst will begin the analysis of the system for that requirement at the level of the business record. However, this will be a rare occurrence. In the vast majority of cases, the analysis of the system in terms of the Functional Requirements will be at the highest sub-function level.

Analyzing how the process is documenting records in terms of the Metadata specifications is important. The goal is to determine if the "data" required to document the business transactions exists and in what form. In other words, the primary objective is to determine whether the metadata category or element exists for that record or class of records. The goal is not to determine whether the value provided for that metadata element is correct or incorrect. Records within business events and even within business sub-functions often will include the same types of metadata. This is particularly true for so-called "management" metadata that document why and how records will be accessed and used, disposed of, and preserved. In most cases, the type of metadata collected to document these activities will be the same for many, many records within



a business process. Even audit trail metadata documenting activities performed on individual records is predictable, because so much of this type of documentation is collected automatically by the system and applied to many records within a business process. Finally, even types of metadata that are unique to a specific record, such as the unique identifier, can be analyzed at the aggregate level by asking the question “for records of this class or function, does the process assign a unique identifier” Again, it is important to remember that what we are analyzing is whether the system collects or creates this category of metadata and not whether the metadata value is correct or not. Accordingly, as with the functional requirements, the analyst will begin by reviewing and analyzing how the metadata specification is met at the highest-level sub-function for the business function under review. If during the analysis it becomes clear that the records produced in the course of completing lower-level sub-functions are documented differently than the records of related sub-functions, the analyst will then proceed to analyze the records at the next lower level. Similarly, if types of metadata collected at the level of the business transaction are different, then the analyst will begin the analysis of the system for that specification at the level of the business event or record.

In most cases, designing a new document management and workflow system is a two step process involving the description and modeling of business processes, followed by the insertion of recordkeeping requirements and specifications and the results of your business process models into the design of the new system. Analysis of existing systems is normally a more time consuming, more difficult process. It involves not only specifying requirements, metadata specifications and a list of records to be captured. It also requires an analysis of how the present system is managing the data. In essence, the process involves analysis of “what is” as depicted by models and system documentation with “what should be” as defined by the requirements, specifications and models. Although the methodologies for design of new systems and the analysis and modification of existing systems share common elements, we thought it made more sense to create two different documents outlining each methodology.

WORK STEPS: Part I

1. Project staff selects a business area for analysis and process surveys are provided and completed.





2. Analyst are assigned who review existing functional process models or data flow models, and other available documentation describing business processes. It is particularly important to review process models created when the process was designed if any.

3. Analyst conducts interview(s) utilizing the IDS Assessments and requirements Study Worksheet, with one or more staff from the business area to gather information about major business functions and event processes. Again it is extremely important to keep in mind that what we are asking staff to describe are business requirements and not a list of implementation procedures. Initially, staff to be interviewed should understand the responsibilities of the entire business unit for identification of higher-level functions and events. As needed, other staff may be identified as appropriate resources for identification of elementary processes.

Questions to be answered in every case:

** What are the major business functions and sub-functions of this business unit?

** What are the business processes undertaken to implement these functions? In other words, what are the processes or transactions involved in performing this function?

** What are the business events that trigger an activity and cause records to be produced?

** What are the elementary processes that are initiated in response to these events? These processes will include: creating a new occurrence of an entity (add); updating an occurrence of an entity (change or modify); and deleting an occurrence of an entity.

4. Analyst creates a narrative statement describing 1) the various business processes for the function(s) under review, and 2) each event process transaction, including information on the name of the event process, input activities, and output activities.

5. Analyst creates a functional decomposition/flow diagram that depicts the relationships between and among functions and business events or transactions for the function(s) under review.

6. Analyst creates models or depictions of the business event processes, including information on the inputs and the various elementary processes or outputs.

7. Analyst creates a list of the records/documents that are created as products of the processes under review.

8. Analyst compares any logical models of business processes created when the process was designed with the business models generated during interviews with system managers and identifies and describes any differences in the two models.



9. If there are differences in the definition of processes and records creation, the analyst will work with record creators and data managers to reconcile difference and come to an agreement on the products of the business processes.

WORK STEPS: Part II

1. Analyst gathers available documentation on systems, standards, procedures, retention schedules, etc. Prominent categories of documentation include: Processing descriptions with models, if available; procedure manuals and workflow information relating to routing, inputting, updating, saving and deleting records; procedure manuals relating to backing-up, migrating, purging, exporting and restoring data; documentation on data and data models to determine what types of informational value may be present in records; procedures that define access and use of records, and training procedures; existing disposition schedules and laws, policies and best practices related to recordkeeping; policies and procedures dealing with security and authorization mechanisms; documentation describing predefined reports and inquiries; and documentation describing specific applications that are part of the system, including on-line processing transactions and batch jobs.

2. Where documentation is unavailable or lacks details, the analyst interviews staff and administrators who are familiar with the how the system processes and manages data and records.

3. Using the functional decomposition analyses and system documentation, the analyst reviews how the system should be managing records in accordance with the "Requirements for Electronic Records Management Systems."

WORK STEPS: Part III

1. Analyst gathers available documentation on how the system will document data and records. Prominent types of documentation include business process models, data models, and data dictionaries.



2. Where documentation is unavailable or lacks details, the analyst interviews staff and administrators who are familiar with the how the system documents data and records.
3. Analyst reviews how the system should be documenting records in accordance with the Recordkeeping Metadata Specifications.

DELIVERABLE:

1. Responses will be organized at the highest level sub-function, and only will include analysis at lower levels as needed. Within each sub-function, the responses will be arranged according to the list of Functional Requirements and will address the issues defined for each requirement. For each requirement, a brief narrative statement describing how the system should be meeting the requirement will be prepared with benefits and products defined.