

Convero Project Management

System Overview



June 13th, 2002

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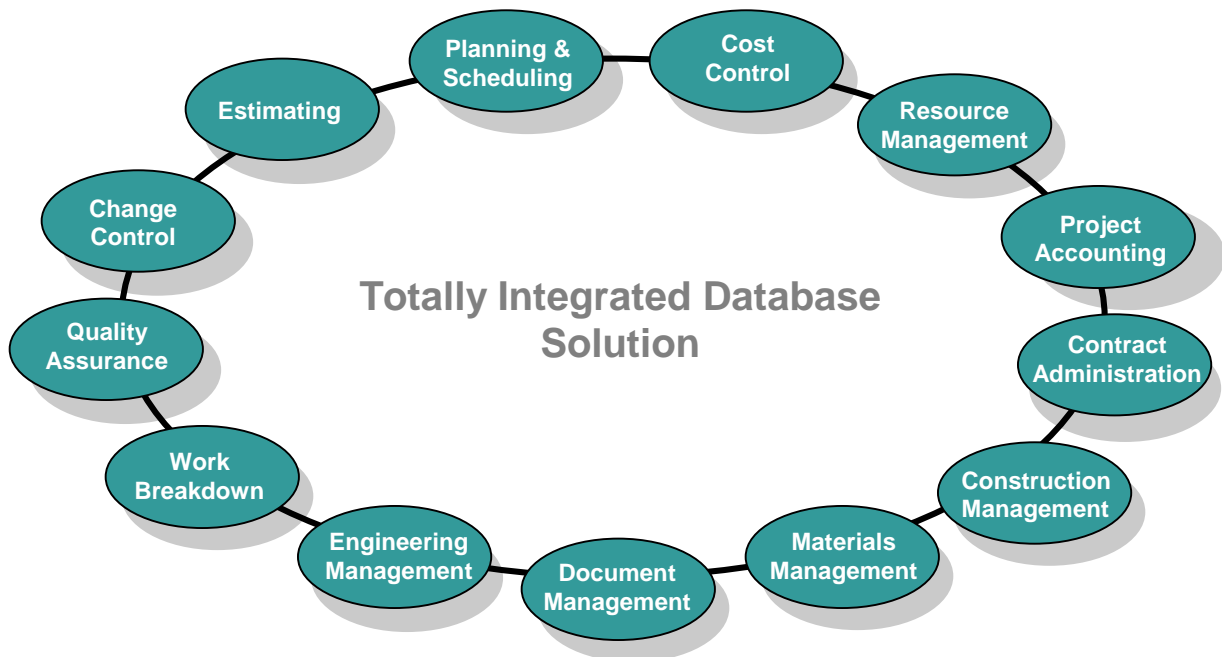
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1. System Overview

1.1 Introduction

Convero is a package that combines proven project management principles and procedures with the latest in computer technology, providing today's project managers with a complete solution to their procedural and information processing needs.

In today's fast paced business environment, project management is more than just planning and schedule reporting. Managers are faced with the dilemma of juggling multiple tasks while trying to execute their projects to predetermined quality, cost and schedule objectives. Impacting performance are worldwide sourcing of materials, the need to demonstrate regional benefits and the requirements of both external and internal audits - generally increasing complexity and the ability to respond to benefits gained through the use of rapidly changing technology. To be successful, project managers must avoid problems before they occur and maximize opportunities as they arise. Convero is designed to address these needs by providing access to the right data at the right time and implicitly ensuring the integrity of that data source.

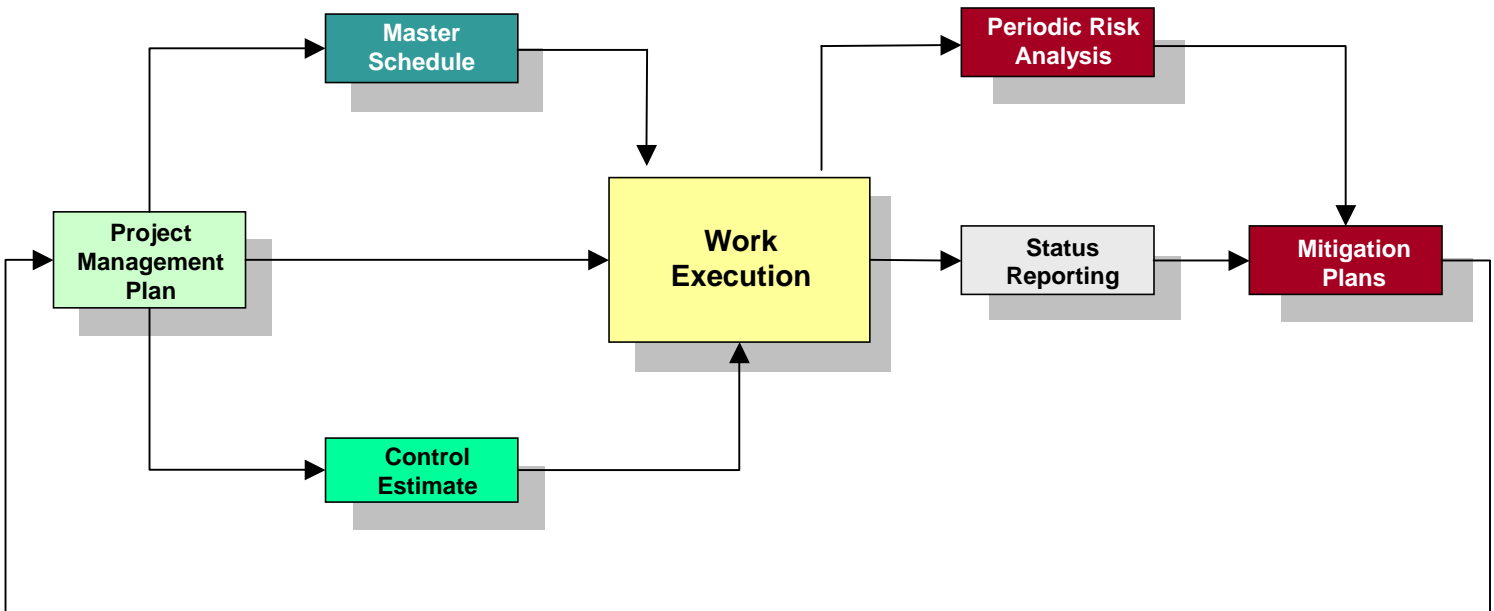


1.2 Executive Summary

More than a planning and scheduling package, Convero is a fully integrated management information database. Integrated around common coding structures and used in conjunction with proper control procedures, Convero can be the sole source of all project management information. When installed as multi-user system, it is a live, proactive tool, continually comparing progress to the plan and forecasting of the future.

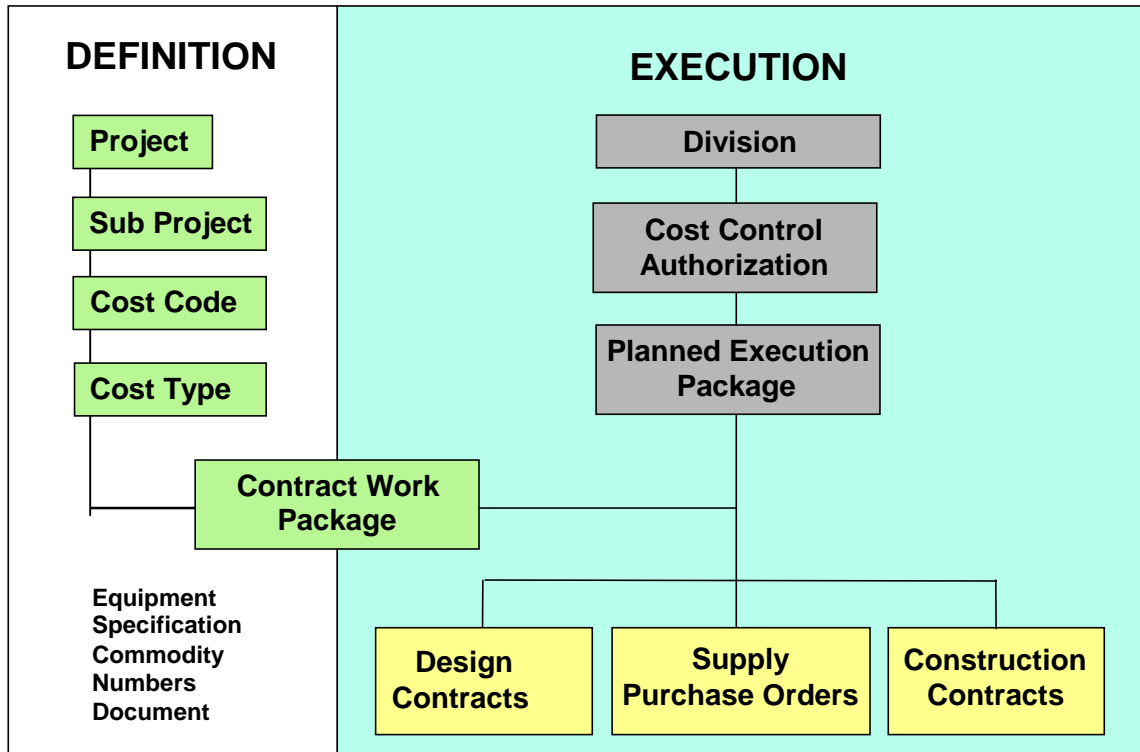
1.3 Principles

The basic project management principle that Convero supports is that all work falls under the following project management and control process:



Convero provides timely, accurate data with which to make decisions at all points in this process.

1.4 Coding Structures



Flexible coding structures are adaptable to most project and client situations.

1.5 Convero Architecture

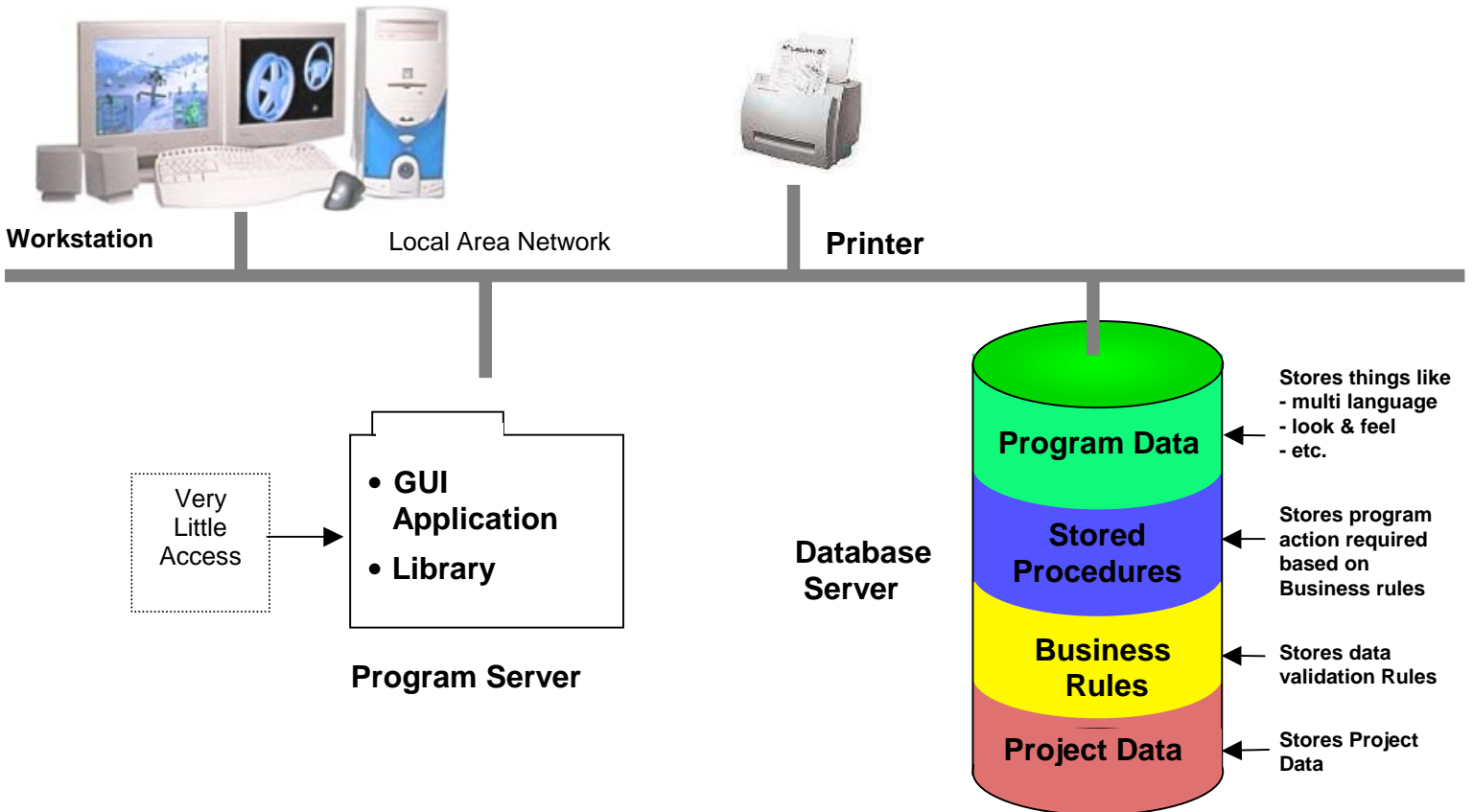
The Architecture of Convero can take two forms:

- Client Server
- Web Enabled

1.5.1 Client Server

The architecture of Convero uses application partitioning within a client/server structure. This places the user interface processing on the client side of the application with calls through a network to a database located on the server. By partitioning the processing, the application minimizes overhead to the network and leverages the power of both the client and the server for optimized processing.

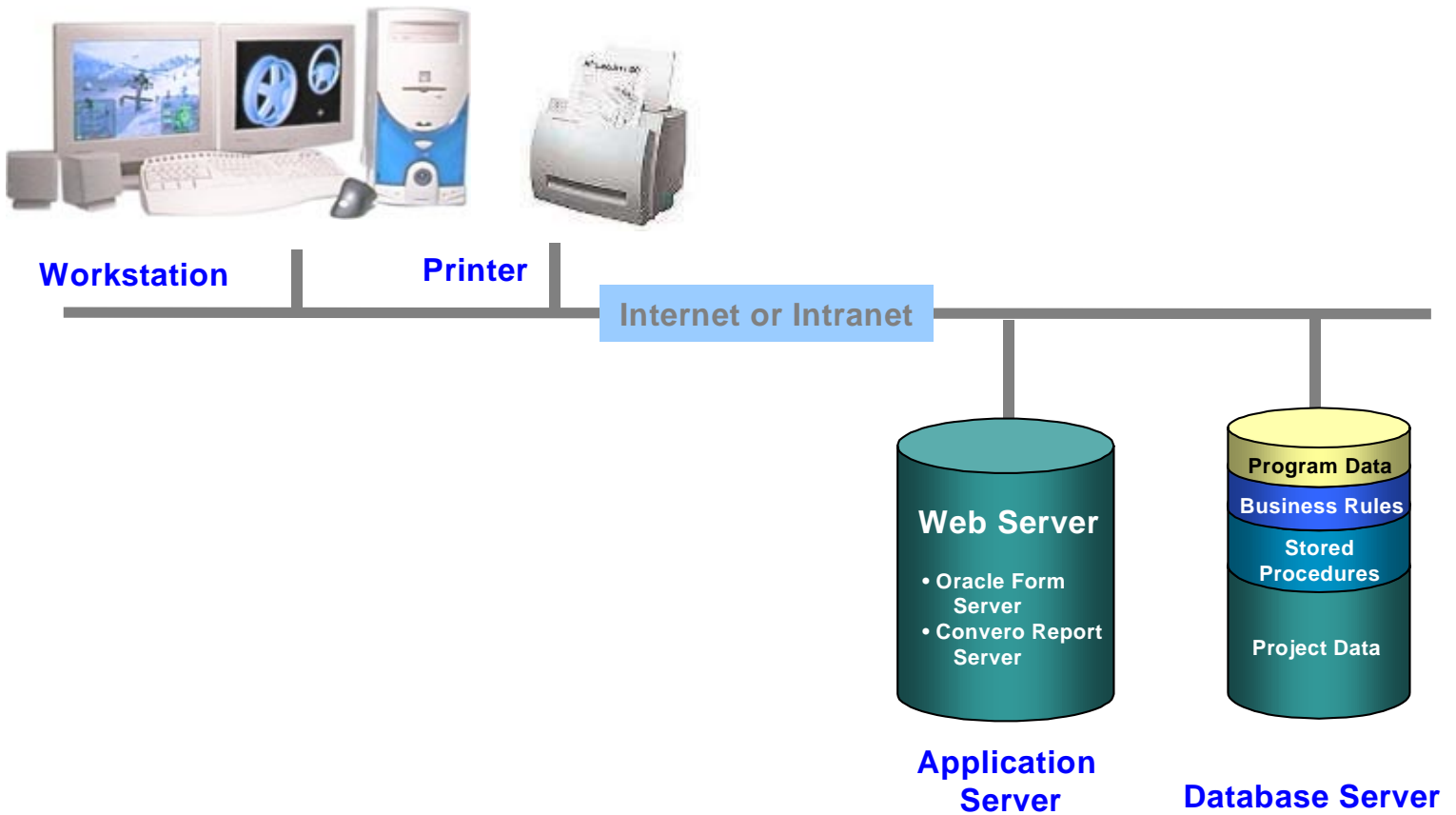
Workstation Running Windows & SQL *Forms 4.5



1.5.2 Web Enabled

Convero is a Web enabled application. The design of Convero is a multi-layered structure utilizing a standard Web Browser which in turn communicates with a Web server. The Web server in turn communicates with a Database Server. The structure of this environment minimizes the network traffic allowing users global access to Convero using the Local Intranet or the Internet.

Standard Web Browser

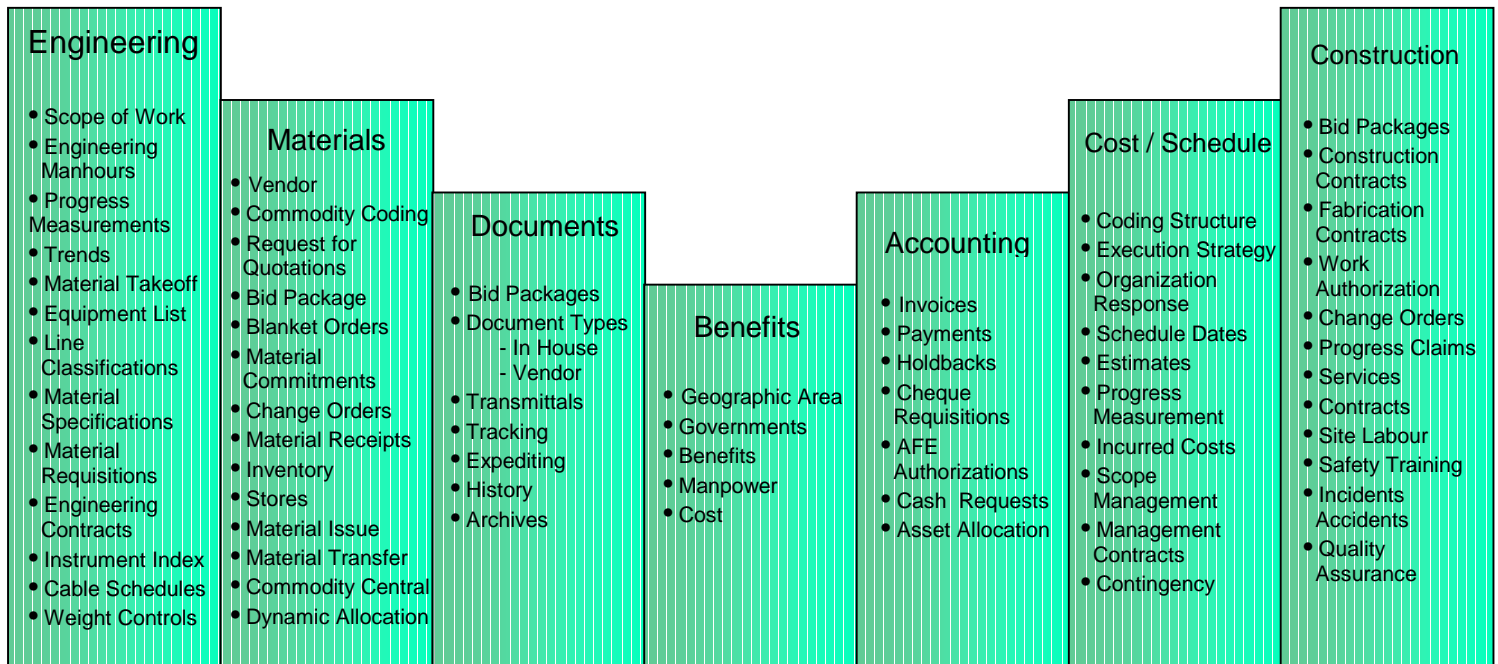


2. Functional Overview

The following functions are integrated to form Convero:

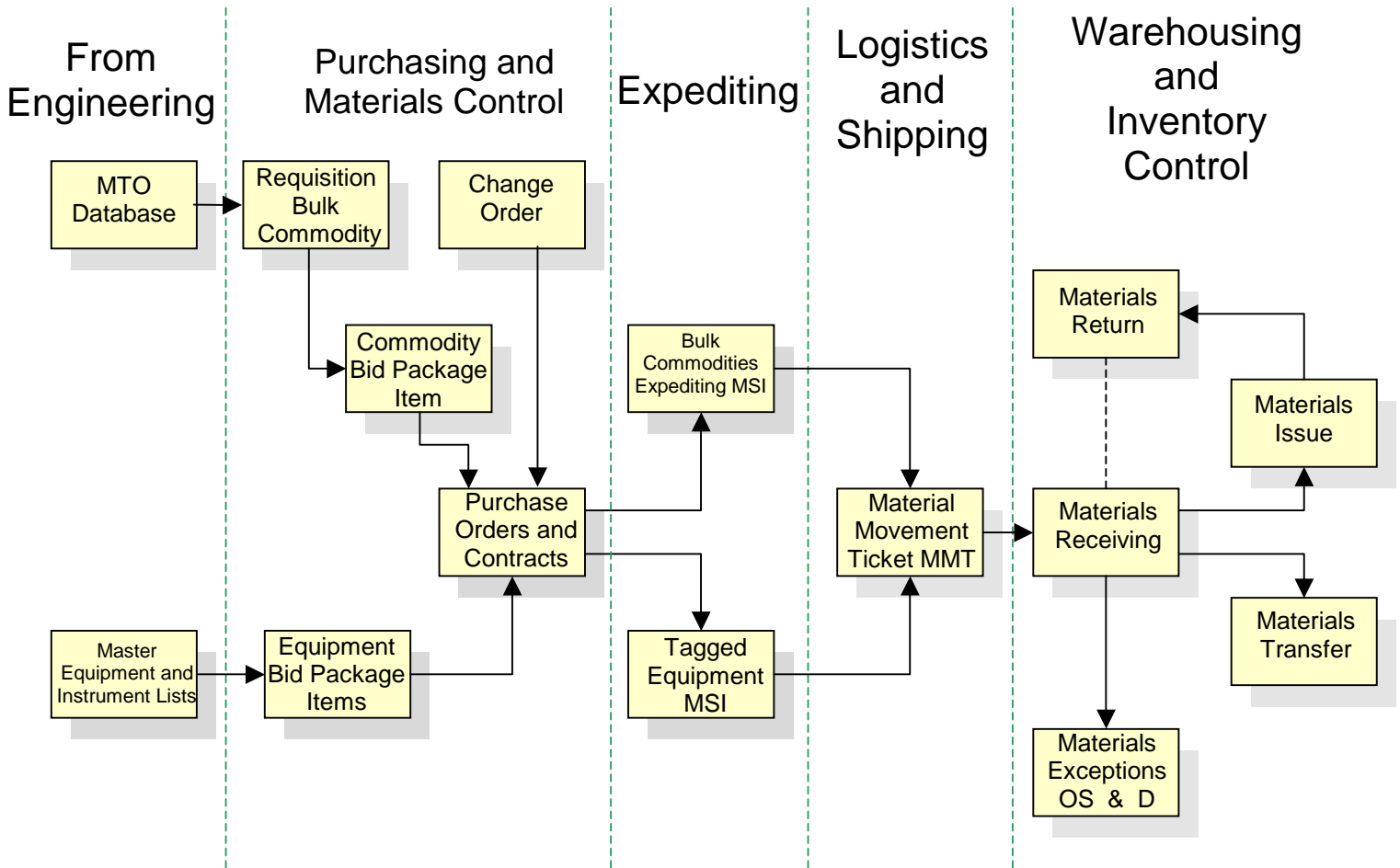
Project Management

Integrated Project Management System



Single Source of Data

All of the above data elements are stored in a common relational database virtually eliminating redundant data between functions. Savings of up to 40% of the total data volume in some areas have been achieved compared to similar, non-integrated systems.



2.1 Materials Management

The Materials Management module in Convero tracks and controls all materials from the initial determination of requirements through the purchasing, shipping and warehousing stages to the point of issue to contractors in order to meet the construction schedule and material requirements.

A vendor library complete with addresses and contact names is contained within the Materials Management module of Convero. Comprehensive vendor qualification and performance rating capabilities exist as well as the ability to generate a listing of approved vendors for specific materials or services.

Descriptions and characteristics for all procured items are contained in the commodity library as well as the detailed reference data for all equipment. Commodities and equipment identified from sources such as engineering drawings, specifications and isometrics are transferred or input into Material Takeoffs from which they can be uploaded into requisitions for purchase or estimating purposes. Requisitioned materials and equipment are collected into bid packages for obtaining and evaluating pricing or uploaded directly into purchase orders with the option for automatic pricing from frame agreements.

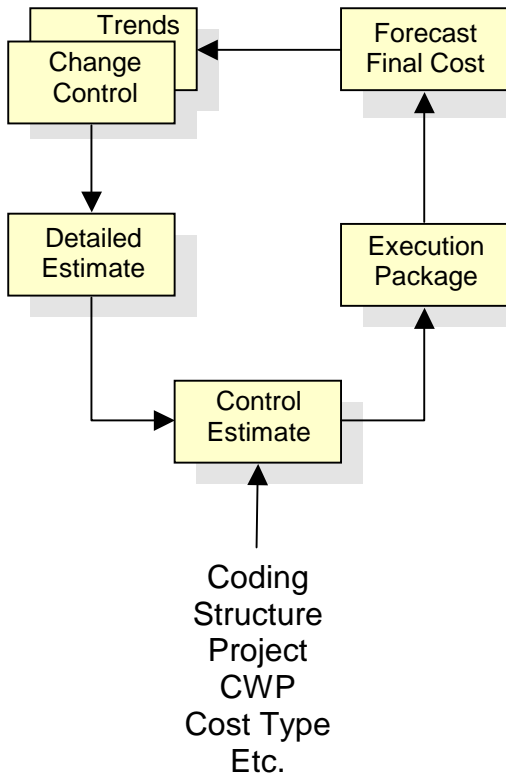
Procurement planning capabilities exist through the use of milestones and required on site dates which are assigned to each bid package. Successful bids are uploaded into purchase orders allowing the generation of the purchase documentation and bills of material. Any changes to an approved purchase order must be done through a change order thus maintaining complete change control as well as an historical record of all transactions.

The status of material from receipt and acknowledgement of the order through the manufacturing process, preparation for shipment and inspection acceptance to the actual delivery is tracked through the Expediting and Inspection facilities ensuring that vendors meet the contractual delivery dates for materials and equipment. Material Movement Tickets allow the planning and executing of the delivery of materials from the delivery point to the required destination.

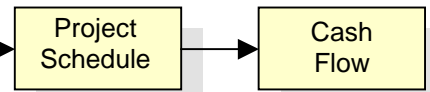
Material Receiving acknowledges the arrival and confirms the receipt of materials on-site. The quantities and materials received are confirmed and reconciled with the documentation then assigned to warehouse locations and entered into inventory. Full material traceability is maintained. A Material Exception Record is created to identify and coordinate the resolution of any discrepancies such as overages, shortages, damage or non-conformances. The material handling functions of inventory, issuing, material transfers, warehouse transfers and returns are supported.

Throughout the process, a material control system monitors quantities and current status of all equipment and materials. A feature called Dynamic Allocation exists within Convero which identifies material availability and compares it with material requirements to determine the most efficient allocation of materials to satisfy construction or fabrication needs.

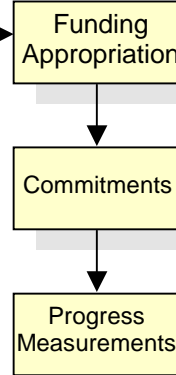
Definition



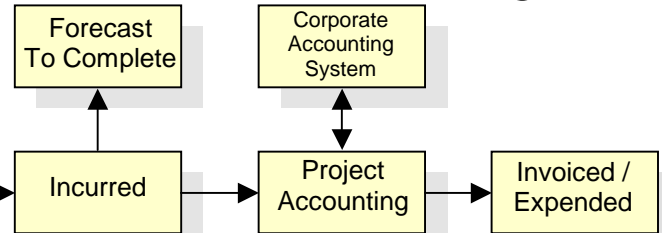
Cost Flow



Execution



Accounting

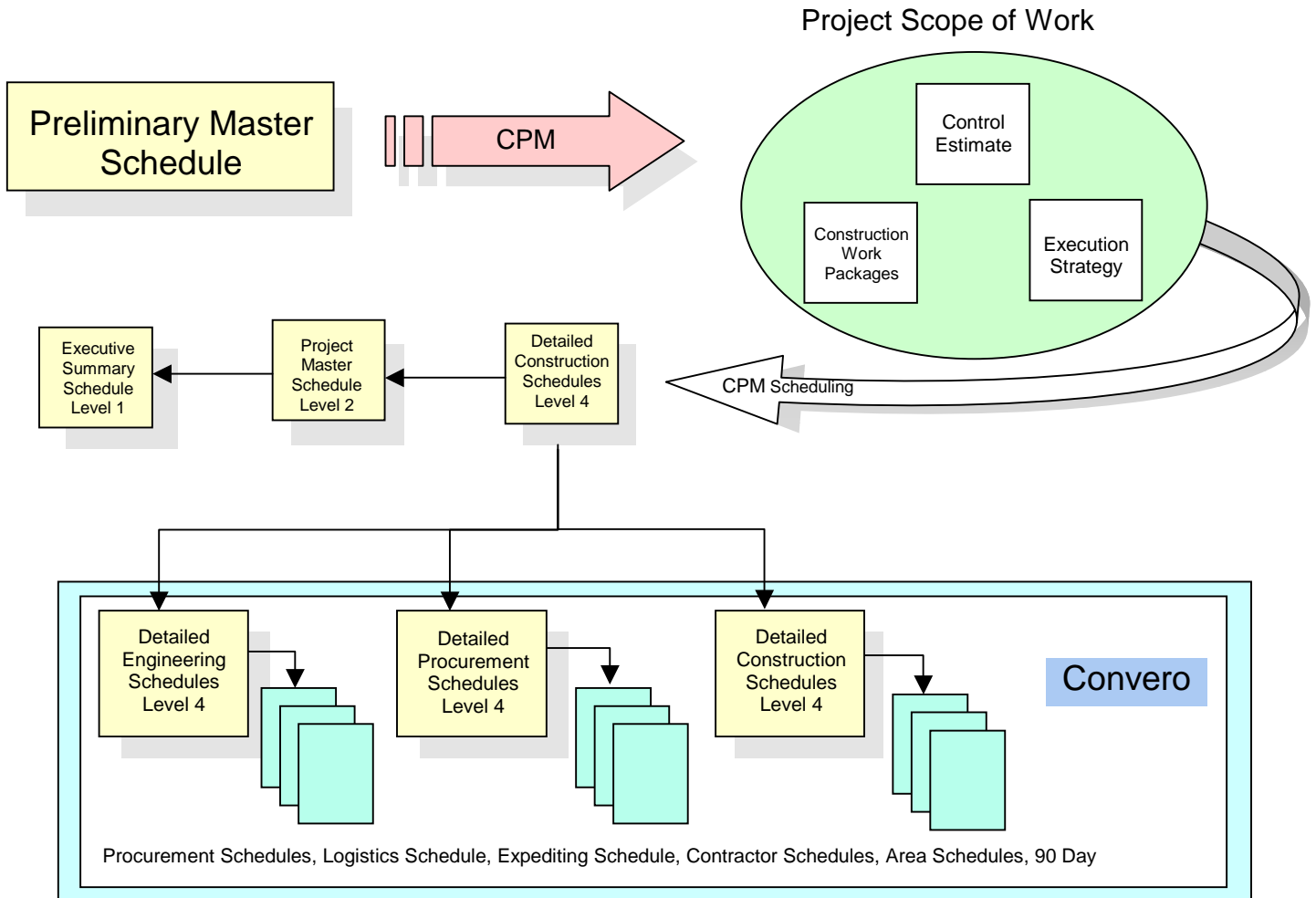


2.2 Cost Management

The cost control and management process begins with the detailed estimate which may be created in Convero or input from an external source. The detailed estimate is cast against the project coding structure and rolled up to a summary level for control purposes. The control estimate is grouped into control packages in line with the project execution strategy. Incremental approval for expenditures are allowed for by funding appropriations. Committed, incurred, expended and final forecast costs are tracked against each control package. Reporting of these cost elements occurs at the purchase order or contract pay item level. Progress is quantified and reported in the contract monitoring system. A change control process accommodates the tracking and reporting of trends, forecast and project change notices. By integrating data from the project schedule at the control package level, cost and cash flows are generated.

Cost reports are available for each of the coding structures; exception reports highlight deviations from the control estimate. Online inquiry screens provide instant access to critical cost data.

Full integration is provided between the Materials Management, Project Accounting, Construction Support and Engineering Management systems.

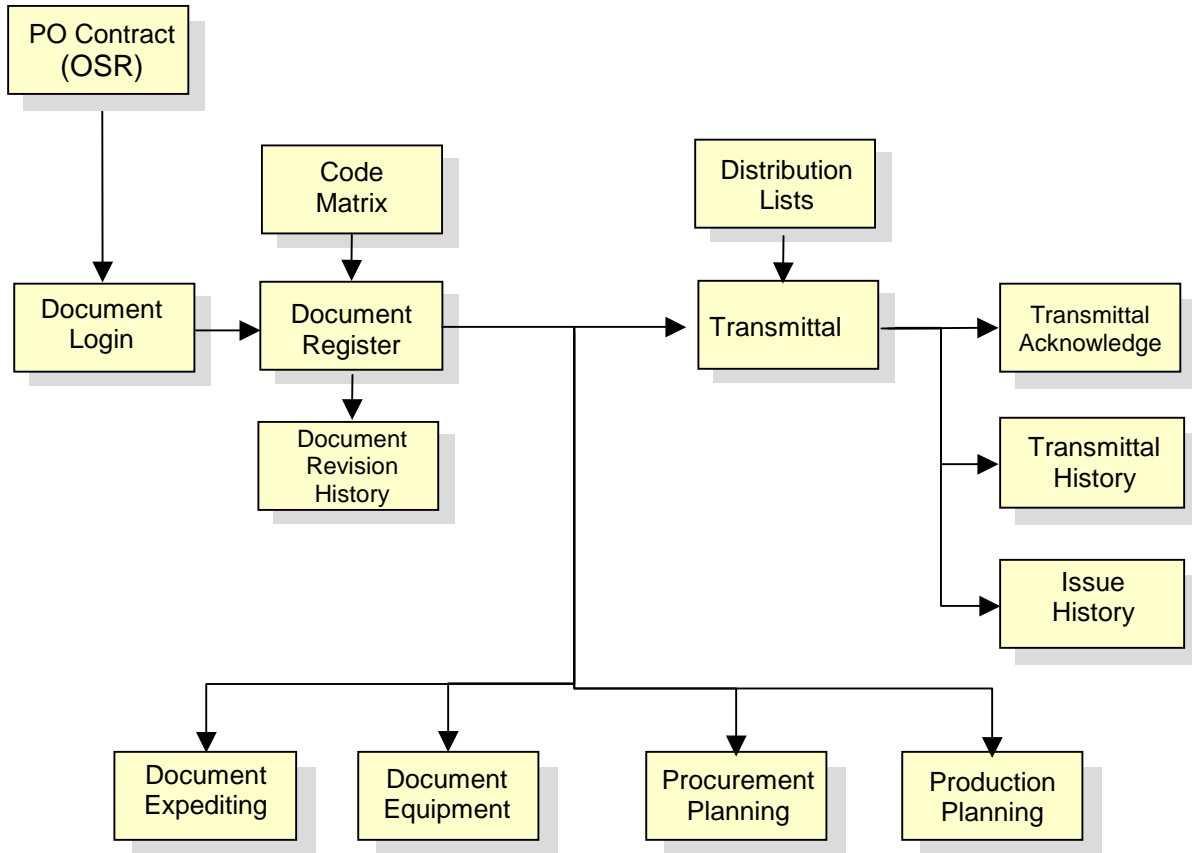


2.3 Planning and Scheduling

Convero utilizes third party software for CPM scheduling and resource leveling. Primavera Project Planner is the most commonly used integrated package, in addition, interfaces have been provided for other CPM processors.

Within the management database of Convero, schedule control is maintained by the use of milestones at the detailed levels i.e. Procurement Schedules, Document Production Schedule, Expediting Schedules, etc. The system can link milestone sets in chains so that schedule data from design flows through procurement and into construction planning.

On the diagram above, levels 1, 2 and 3 would typically be done in a third party scheduling program, with level 4 being maintained in Convero.

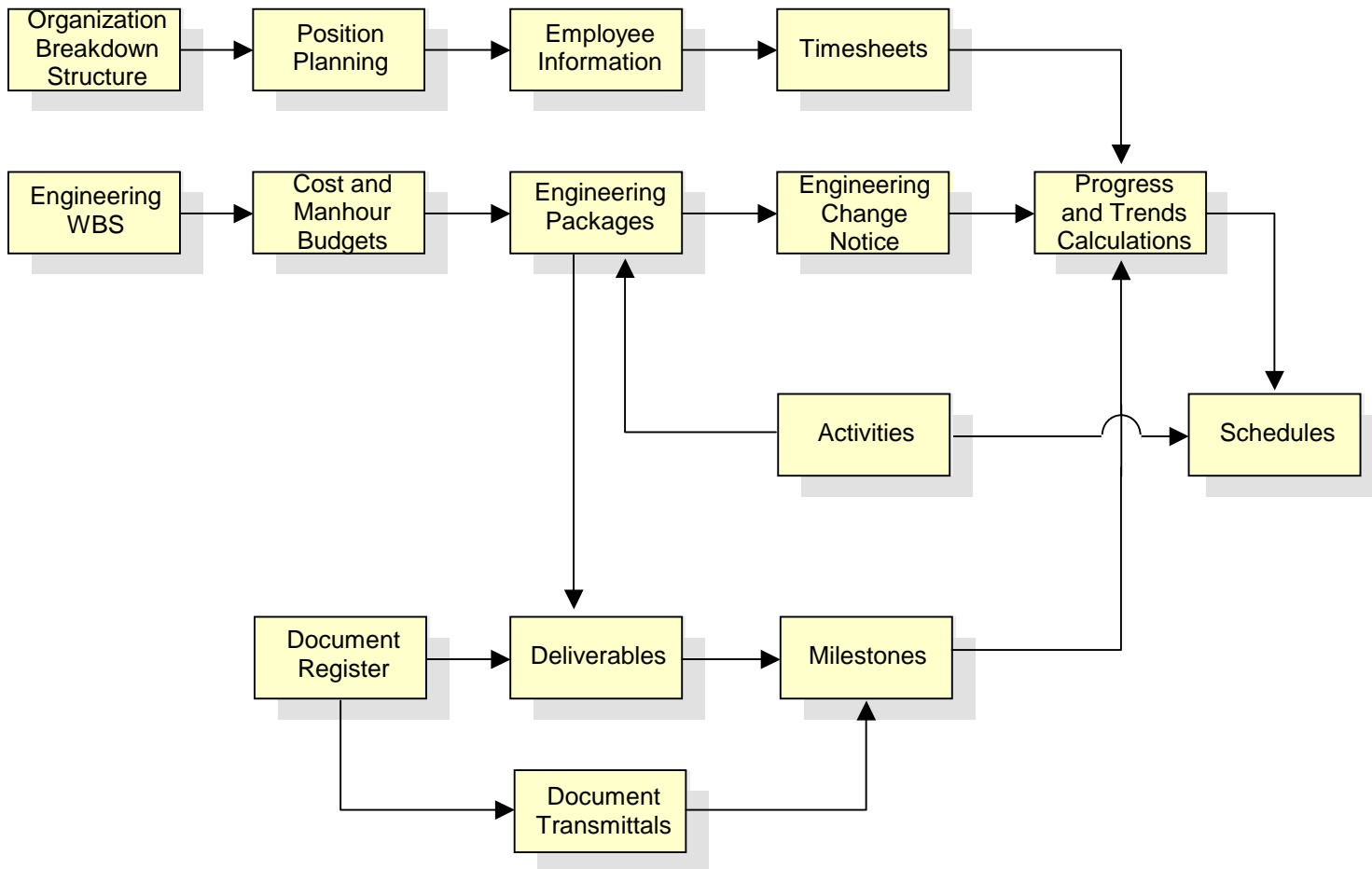


2.4 Document Control

The document control system within Convero deals with the registration and tracking of all project documents. It supports both documents produced internally and those documents received from outside the project organization.

All document transactions are linked to an Originator Sender Receiver [OSR] code. This code in turn is linked to the contracting entities in the project management database. A login procedure records and controls all changes to the document register and provides an auditable log. A central document registry keeps track of all project documents. The transmittal system creates the paperwork necessary for distributing documents and keeps track of documents issued. For documents that are produced internally, links are provided to the engineering planning and progress measurement systems. For documents received externally, monitoring and expediting data is maintained. Interfaces between the document management system and the materials management system provide data for procurement planning.

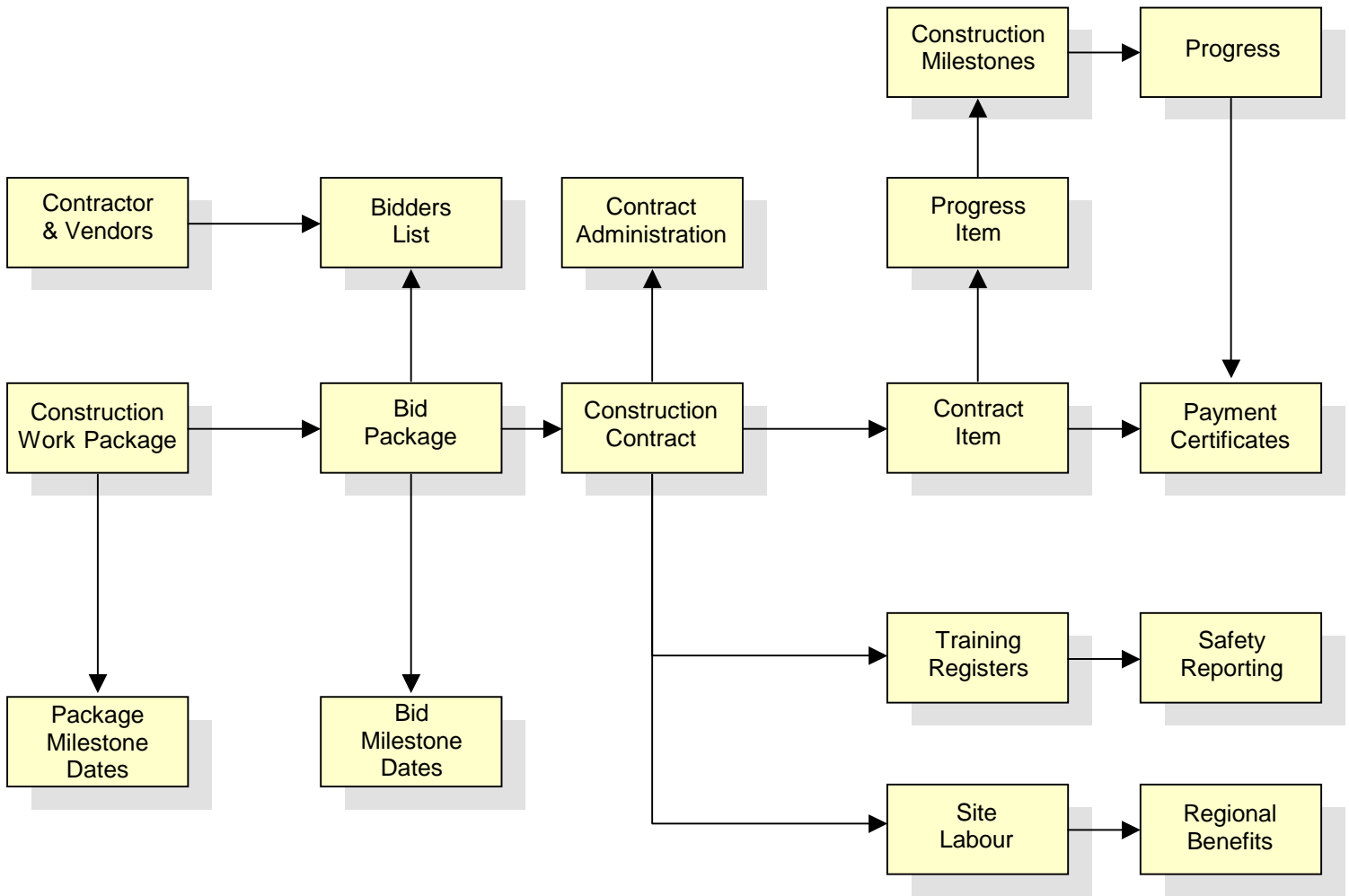
The document management system is designed to reduce as much as possible, the clerical effort required for the administration of the function. The use of bar coding is available to reduce data entry.



2.5 Engineering Management

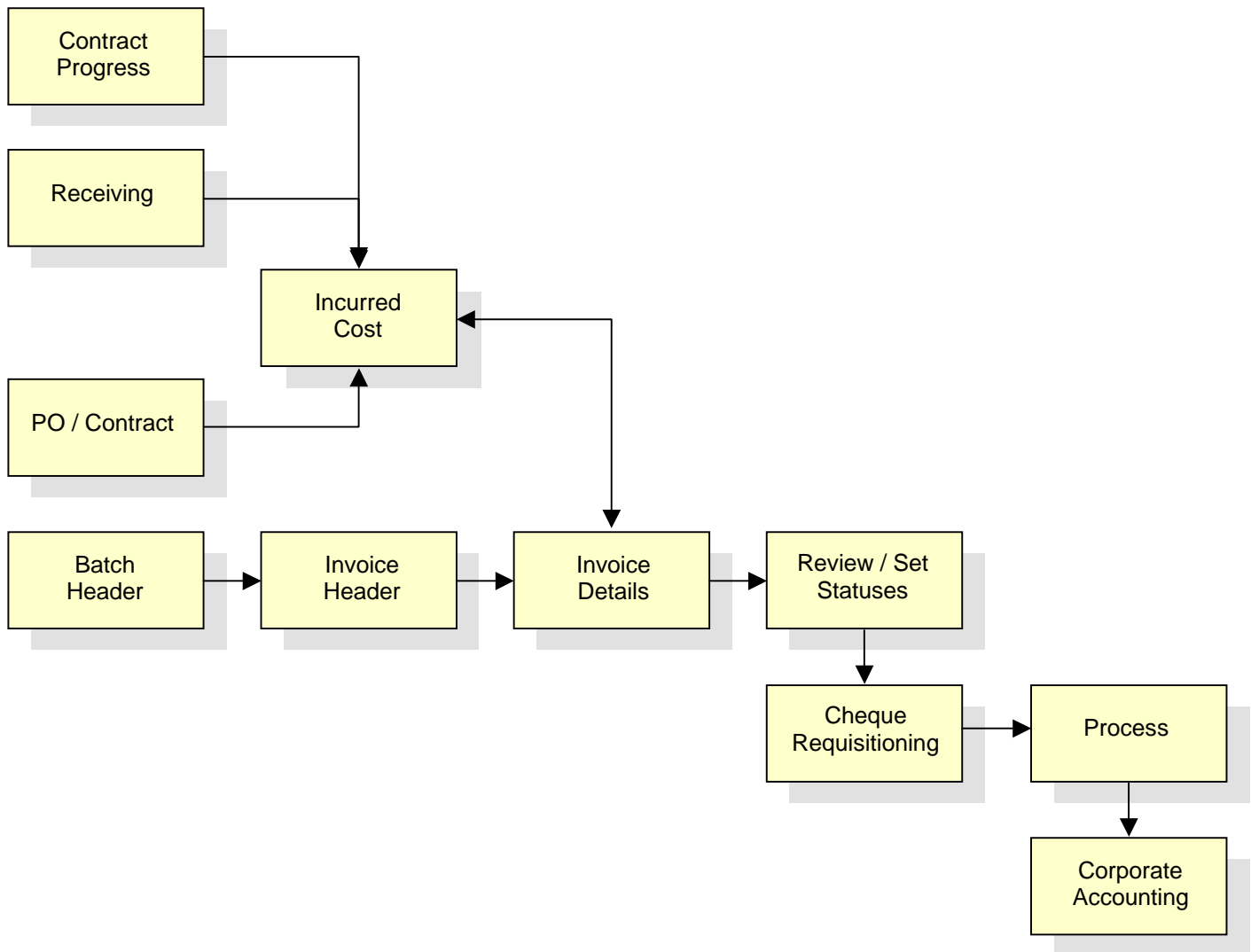
Engineering Management comprises the programs that assist in the management and administration of the home office design function.

Convero provides the ability to create a work breakdown structure for the control of engineering (EWBS) independent of the structure used for overall project management. Each element of the EWBS has a budget and schedule. Engineering change notices are used to control scope changes. Engineering work packages are used to monitor progress. The major components of progress measurement are the documents to be produced during the engineering phase; these are integrated from the document management database. Progress is at the milestone level for each document and rolled up to the package and EWBS for reporting. An organization structure is created; project positions and assigned employees are planned and tracked. Timesheets collect actual hours spent against each element of the EWBS. Actual hours spent are compared to progress earned and trends established for costs at completion. Progress information is fed back to the scheduling database.



2.6 Construction Management

The construction management functions within Convero share the full features of both the Cost Management and Materials Management systems. In addition, these are supplemented by a safety system, a physical progress measurement system and a site labour reporting system.



2.7 Project Accounting

Project accounting is a follow-on system to the Cost Management and Materials Management systems. Accounting data in the form of invoices received and payment approvals is value added to the original input by Materials Management.

Within Convero, accounting stops at the request for payment and is usually interfaced to a client financial accounting system at this point.

Convero accommodates multi-currency transactions and also has special routines to assist in the administration of taxes and duties.

2.8 Regional Benefits

Regional benefits information is available for projects that require the tracking and reporting of costs and manpower by geographical centers. This information is fed from the Materials Management, Cost Management, Project Accounting and Construction Management systems.