CONSTRUCTION PAYMENT MANAGEMENT SYSTEM AND METHOD WITH DOCUMENT EXCHANGE FEATURES

BACKGROUND OF THE INVENTION

[0001] In the construction industry, some companies have invested a large amount of money and time to automate and/or eliminate particular aspects of the invoicing process between the payer (e.g., a builder, a bank, or a property owner) and a payee (e.g., a subcontractor, vendor, or materials supplier).

SUMMARY OF EMBODIMENTS OF THE INVENTION

[0002] Comprehensive automated construction payment management systems may be unneeded or undesired by certain participants in the construction industry. However, such participants may still need or desire automated systems for particular aspects of a construction project or process. As such, there remains a need for automated systems or modules that capture invoices and process budgets or schedules of values, check for document compliance (e.g., verify receipt of requested/required documents), and/or exchange an electronically signed lien waiver for a payment.

[0003] Some embodiments of the invention provide systems and methods of managing a construction payment process involving a plurality of participants associated with the construction project and at least one document to be transferred between at least two participants during the construction project in exchange for a payment transferred from a participant receiving the document to a participant creating, submitting, or electronically signing the document. In some embodiments, the method can further include assigning the at least one document to the disbursement of the payment wherein the payment is automatically disbursed if the at least one document is transferred between the at least two participants.

[0004] In some embodiments, the method further includes assigning a hold payment enforcement action to the at least one document wherein the hold payment enforcement action is automatically effected if the at least one document is not transferred between the at least two participants. In some embodiments, the hold payment enforcement action is automatically effected without regard to the exchange of other documents between the at least two participants.

[0005] In some embodiments, the method further includes creating or electronically signing the at least one document and sending the at least one document to a first participant of the at least two participants, the at least one document requesting a payment from the first participant. In some embodiments, the method can further include receiving approval of the at least one document from the first participant and creating, submitting, or electronically signing at least one additional document in exchange for payment.

[0006] In some embodiments, the method further includes creating or electronically signing the at least one document and sending the at least one document to a first participant of the at least two participants, the at least one document including a payment amount. In some embodiments, the method can further include receiving approval of the at least one document from the first participant and creating, submitting, or electronically signing at least one additional document in exchange for payment based on input from the first participant.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a schematic illustration of a construction payment management system according to one embodiment of the invention.

[0008] FIG. 2 illustrates a lien waiver exchange workflow of the construction payment management system of FIG. 1 without compliance management.

[0009] FIG. 3 illustrates a lien waiver exchange workflow of the construction payment management system of FIG. 1 with compliance management.

[0010] FIG. 4 illustrates a lien waiver exchange workflow of the construction payment management system of FIG. 1 without compliance management and without automated electronic payment.

[0011] FIG. 5 illustrates a lien waiver exchange workflow of the construction payment management system of FIG. 1 with compliance management and without automated electronic payment.

[0012] FIG. 6 is a schematic illustration of a manage project process.

[0013] FIG. 7 is a schematic illustration of a manage organization process.

[0014] FIG. 8 is a schematic illustration of a create organization and/or user process.

[0015] FIG. 9 is an illustration of a create organization form.

[0016] FIG. 10 is an illustration of a new user system notification.

[0017] FIG. 11 is an illustration of a system notification.

[0018] FIG. 12 is an illustration of an edit organization form.

[0019] FIG. 13 is an illustration of an activate organization notification.

[0020] FIG. 14 is an illustration of an activate organization form.

[0021] FIG. 15 is an illustration of an organization activated notification.

[0022] FIG. 16 is an illustration of an organization deactivated notification.

[0023] FIG. 17 is a schematic illustration of a maintain organization process.

[0024] FIG. 18 is an illustration of a view organization screen.

[0025] FIG. 19 is an illustration of a browse organization screen.

[0026] FIG. 20 is an illustration of an edit organization form.

[0027] FIG. 21 is an illustration of an organization profile updated notification.

[0028] FIG. 22 is a schematic illustration of a create user process.

[0029] FIG. 23 is an illustration of a create user form.

[0030] FIG. 24 is an illustration of an update user profile notification.

[0031] FIG. 25 is a schematic illustration of a maintain user process.

[0032] FIG. 26 is an illustration of a view user screen.

[0033] FIG. 27 is an illustration of a browse users screen.

[0034] FIG. 28 is an illustration of an edit user form.

[0035] FIG. 29 is an illustration of a user profile updated notification.

[0036] FIG. 30 is a schematic illustration of a create project process.

[0037] FIGS. 31 and 32 are illustrations of a create project form.

[0038] FIG. 33 is an illustration of a create compliance requirement form.

[0039] FIG. 34 is an illustration of a manage compliance requirements form.

[0040] FIG. 35 is an illustration of a project created notification.

[0041] FIG. 36 is a schematic illustration of a process for assigning user roles for a project.

[0042] FIG. 37 is an illustration of a project user access screen.

[0043] FIG. 38 is an illustration of a project responsibilities notification.

[0044] FIG. 39 is a schematic illustration of a lien waiver exchange process.

DETAILED DESCRIPTION

[0045] Before any embodiments of the invention are explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the following drawings. The invention is capable of other embodiments and of being practiced or of being carried out in various ways. Also, it is to be understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. The use of "including," "comprising" or "having" and variations thereof herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items. The terms "mounted," "connected" and "coupled" are used broadly and encompass both direct and indirect mounting, connecting and coupling. Further, "connected" and "coupled" are not restricted to physical or mechanical connections or couplings, and can include electrical connections or couplings, whether direct or indirect. Also, electronic communications and notifications may be performed using any known means including direct connections, wireless connections, etc.

[0046] It should be noted that a plurality of hardware and software based devices, as well as a plurality of different structural components, may be utilized to implement the invention. Furthermore, and as described in subsequent paragraphs, the specific

configurations illustrated in the drawings are intended to exemplify embodiments of the invention and other alternative configurations are possible.

[0047] FIG. 1 illustrates a construction payment management system (CPMS) 10 according to one embodiment of the invention. The CPMS 10 includes an application server 12, a database server 14, an application logic module 16, a web server 18, a network 20 (such as the Internet or other networks individually or in combination with the Internet), a verification service 22, participating organizations or individuals 24 (hereinafter "participant" or "organization"), and a payment system 26. The payment system 26 can include an automated clearing house (ACH) system, a wire transfer system, a debit card system, a credit card system, a check generating system that can generate checks, drafts, bills of exchange, promissory notes, IOUs, debit notes, or other negotiable instruments, or any other suitable electronic funds transfer (EFT) system. The verification service 22 verifies new organizations and/or users before they are allowed to use the CPMS 10.

[0048] The application server 12 stores and provides access to a project module 28, a form-handling module 30, a permissions and authorizations engine 32, a database management system 34, an access manager 38, a notifications manager 40, an organization module 42, a contracting module 46, a user module 50, a system environment manager 52, and an electronic holding bin/escrow 68. The system environment manager 52 includes a report generator 62, a help module 64, and a system maintenance module 66. The electronic holding bin/escrow 68 can store electronic lien waivers 54 and other electronic payment receipts 56.

[0049] The project module 28 administers the creation of projects and stores project-related information. The form-handling module 30 creates documents based on predefined templates. The permissions and authorizations engine 32 identifies and stores permissions and authorizations for users of the CPMS 10. For example, the permissions and authorizations engine 32 can store permissions that specify which users are allowed to sign on behalf of a particular organization or company. Similarly, the access manager 38 manages access to functions provided by the CPMS 10. For example, the access manager 38 can store permissions and/or project assignments.

[0050] The notifications manager 40 generates notifications to users of the CPMS 10. For example, the notifications manager 40 can generate notifications when actions are required and/or for information purposes. The organization module 42 creates and maintains organizations using the CPMS 10. The contracting module 46 provides

contracting functions and stores contract information. In some embodiments, the contract information is a data class used for posting transactions. The user module 50 creates and maintains individual user accounts for individuals accessing the CPMS 10.

[0051] As shown in FIG. 1, the application server 12 also includes a document management module 88. The document management module 88 functions as a categorization and storage facility for electronic documents.

[0052] In some embodiments, the application server 12 also includes a compliance module 90. The compliance module 90 includes an engine that stores compliance requirements and their status (e.g., whether a given contractor has complied with particular requirements). In some embodiments, the requirements stored in the compliance module 90 track whether documentation of a document (e.g., contracts, applications for payment, sworn statements, insurance coverage or bonding or certification documents, pre-lien notices, lien waivers, etc.) has been received from participants 24 associated with a project, and, in some embodiments, provides warnings and offer options for enforcing compliance through the payment process, up to and including automatically holding a payment. The documents can be associated with a particular project, a particular property of a project, a particular budget line item within a project, or with a particular participant or organization. The documents can also be tracked for expiration and the compliance module 90 can generate warnings and reminders of impending expiration of payment holds being applied. The warnings and reminders are forwarded to contractors via the notifications manager and payment holds are placed and/or released through the monitoring functions of the compliance module 90.

[0053] As shown in FIG. 1, the application server 12 also includes an interfaces module 92. The interfaces module 92 interfaces with external systems, such as accounting systems, project management systems, and enterprise resource planning (ERP) systems, and transmits information to and/or receives information from the external systems.

[0054] It should be understood that the components of the application server 12 could be combined in a different manner than as shown and described with respect to FIG. 1. The software used to code the various modules, managers, and engines of the application server 12 can be combined or separated in any suitable manner and can be stored and accessed in any suitable manner.

[0055] The application server 12 can be connected to the database server 14, the application logic module 16, and the verification service 22. However, in some

embodiments, the verification service 22 may only be connected to the network 20. The application logic module 16 can be connected to the web server 18 or, in some embodiments, directly to the network 20. The web server 18 can be connected to the network 20.

[0056] The participants 24 can include, for example, a builder 74, an inspector/field supervisor 76, one or more subcontractors (Subcontractor A 78, Subcontractor B 80, etc.), one or more material suppliers 82, a vendor 84 and one or more construction escrow agents 86. Although not shown in FIG. 1, other participants, such as a bank, a title company, or a property owner, may also be included. The participants 24 can access the application server 12 in order to use the various modules, managers, and engines to perform construction payment management methods according to several embodiments of the invention.

[0057] The participants 24 can be connected to the payment system 26; however, some of the participants 24 might not be connected to the payment system 26 in some embodiments of the invention. In some embodiments, the payment system 26 can include an ACH system with one or more originating depository financial institutions (ODFI) and one or more receiving depository financial institutions (RDFI).

[0058] FIG. 2 illustrates an example of a lien waiver exchange workflow managed by the CPMS 10. In this example, builder 74 is a residential homebuilder; however, the CPMS 10 could be applied to situations where builder 74 is engaged in non-residential construction. Furthermore, similar functionality could be applied to situations where the exchanged document is not a lien waiver 54.

[0059] As shown in FIG. 2, a homebuilder 74 can provide the CPMS 10 with project lien waiver requirements. In some embodiments, the homebuilder 74 directly enters the lien waiver requirements into the CPMS 10 (e.g., via a keyboard, a touchscreen, etc.). In other embodiments, the CPMS 10 interfaces with an external system of the homebuilder 74 (e.g., an ERP system) via the interfaces module 92 to obtain the requirements. The lien waiver requirements specify the type of lien waiver required, the dates by which lien waivers must be received in order to receive payment, etc.

[0060] After the homebuilder 74 provides the requirements, the homebuilder 74 can provide the CPMS 10 with vendor project payment data. The vendor project payment data can be directly provided by the homebuilder 74 and/or uploaded from an external system of the homebuilder 74 (e.g., an ERP and/or accounting system) via the interfaces module 92.

The payment data provided by the homebuilder 74 links a line item with a project, a vendor 93 to be paid, and a requested lien waiver. The payment data includes an amount of a payment to be paid to a particular vendor 93.

[0061] When a vendor 93 requests a payment, the CPMS 10 can create an invoice requesting a payment on behalf of the vendor 93. The homebuilder 74 creates an invoice (e.g., using the CPMS 10) on behalf of the vendor 93 that includes a specified payment amount. The vendor 93 views the invoice and approves or disapproves the specified payment amount via the CPMS 10, but cannot modify the payment amount. Once the vendor 93 approves the invoice, the CPMS 10 prompts the vendor 93 to sign a lien waiver in order to initiate payment to the vendor 93. In this manner, the homebuilder 74 specifies the invoice or billed amount submitted by the vendor 93 and, therefore, is often referred to in the industry as "specified billing."

[0062] In some embodiments, the CPMS 10 can support "specified payment environments," "specified billing" environments, and invoicing environments, wherein a vendor creates and submits an invoice requesting payment. In some embodiments, the payment amount is specified or set by the vendor 93 (e.g., as a dollar amount or as a percentage of completion), and the homebuilder 74 approves the payment amount (e.g., via the CPMS 10). In some embodiments, the vendor 93 submits an invoice through the CPMS 10. Alternatively, the homebuilder 74 or CPMS 10 can generate an invoice on behalf of the vendor 93 based on the requested payment amount.

[0063] After payment data is input into the CPMS 10, the CPMS 10 prompts a vendor 93 (e.g., via a notification) to sign a lien waiver via an electronic signature module of the CPMS 10. The lien waiver can be a partial or a final lien waiver.

[0064] Once the vendor 93 electronically signs the lien waiver and submits the lien waiver to the CPMS 10, the CPMS 10 stores the lien waiver in the electronic holding bin 68 and automatically queues a payment to the vendor 93. As shown in FIG. 2, the CPMS 10 of this example includes a ready-to-pay module 95 that stores queued payments. Once the payment is ready to execute, the CPMS 10 initiates a payment to the vendor 93 (e.g., via the payment system 26). For example, the CPMS 10 can initiate a payment to the vendor 93 via ACH.

[0065] The CPMS 10 also allows the homebuilder 74 access to the signed lien waiver. In some embodiments, however, the CPMS 10 prevents the homebuilder 74 from viewing

the signature on the lien waiver until payment to the vendor 93 is confirmed. Once the payment is confirmed, the CPMS 10 also provides a receipt of payment (e.g., via a notification) to the vendor 93. In addition, the CPMS 10 can create a payment record, which the CPMS 10 stores internally in a payment module 96 and provides to the homebuilder 74 (e.g., via an external ERP or accounting system of the homebuilder 74). In some embodiments the payment record can include an ACH record or file.

[0066] It should be noted that the CPMS 10 illustrated in FIG. 2 does not include a document management module 88 or a compliance management module 90. Therefore, the CPMS 10 illustrated in FIG. 2 does not provide compliance management. FIG. 3 illustrates a workflow of the CPMS 10 interacting with a homebuilder 74 and one or more vendors 93 wherein the CPMS 10 includes a document management module 88 and a compliance management module 90 and, therefore, provides compliance management. It should be understood that in some embodiments, the CPMS 10 can include a document management module 88 and a compliance management module 90 that can be "turned-on" and "turned-off" in order to optionally provide compliance management as needed or desired.

[0067] The CPMS 10 shown in FIG. 3 receives project lien waiver requirements as described above with respect to FIG. 2. The CPMS 10, however, also obtains document requirements from the homebuilder 74. The document requirements can include a list of documents the homebuilder 74 requires from a vendor 93, deadlines for receiving the requested documents, actions to be taken if the requested documents are not received from a particular vendor 93, etc. For example, the homebuilder 74 can specify an enforcement action for a particular requested document. The enforcement action specifies at least one action to be automatically performed by the CPMS 10 if a vendor 93 does not provide a requested document. For example, the enforcement action can include an "Advise Only" action that includes automatically notifying the homebuilder 74 and/or the vendor 93 of a missing document. The enforcement action also can include a "Hold Payment" action that includes automatically holding a payment to a vendor 93 who does not provide a requested document.

[0068] The document or compliance requirements can be set at an organization level and/or a project level. In some embodiments, the homebuilder 74 can directly enter the document requirements into the CPMS 10. In other embodiments, the homebuilder 74 can load document requirements to the CPMS 10 via an external system (e.g., an ERP system) using the interfaces module 92 of the CPMS 10. After the homebuilder 74 provides

document requirements to the CPMS 10, the vendor 93 can upload the requested documents to the CPMS 10 for approval by the homebuilder 74.

[0069] After the homebuilder 74 provides the lien waiver and document requirements, the homebuilder 74 can provide the CPMS 10 with vendor project payment data via the interfaces module 92 as described above with respect to FIG. 2. After the homebuilder 74 enters the payment data into the CPMS 10, the CPMS 10 prompts the vendor 93 (e.g., via a notification) to electronically sign a lien waiver and, once the vendor 93 signs the lien waiver, stores the lien waiver in the electronic holding bin 68. At this point in the lien waiver and payment exchange process, the CPMS 10 can also prompt the vendors 93 to enter any missing compliance documents that are required before a vendor can receive a payment. In comparison to the exchange process described above with respect to FIG. 2, if the vendor 93 is noncompliant with the required documents and the homebuilder 74 has selected to hold payments when a vendor 93 is deemed noncompliant, the payment for the vendor is not automatically generated even if the vendor 93 signs the requested lien waiver.

[0070] When a vendor 93 is compliant with the required documents, the homebuilder 74 updates the status of the compliance requirements associated with the vendor 93 and releases any held payments. A payment is then queued for execution, as described above with respect to FIG. 2. Once the payment is ready to execute, the CPMS 10 initiates a payment to the vendor 93 (e.g., via ACH). The CPMS 10 also allows the homebuilder 74 to access the signed lien waiver. In some embodiments, however, the CPMS 10 prevents the homebuilder 74 from viewing the signature on the lien waiver until payment to the vendor 93 is confirmed. Once the payment is confirmed, the CPMS 10 provides a receipt of payment (e.g., via a notification) to the vendor 93. In addition, the CPMS 10 can create a payment record for the homebuilder 74, as described above with respect to FIG. 2.

[0071] In additional embodiments, various aspects of the workflow illustrated in FIGS. 2 and 3 may be modified or removed depending upon the particular needs of the builder 74 and the construction project. For example, FIGS. 4 and 5 illustrate lien waiver exchange workflows wherein the CPMS 10 is not directly connected to a payment system 26. Instead, builder 74 is notified by the system that a lien waiver has been stored in the electronic holding bin 68. Builder 74 then effectuates payment manually – for example, by writing a check and physically delivering it to the vendor. Builder 74 indicates to the CPMS 10 that payment has been made and CPMS 10 proceeds as illustrated above in FIG. 2 or 3.

[0072] FIGS. 6-39 illustrate an overview of the construction payment management processes that can be performed by the participants 24 using the various modules, managers, and engines stored in the application server 12. FIG. 6 illustrates a manage project process 97, which includes an interface project/contract process 98, a create projects process 99, a maintain contracts process 100, and a maintain projects process 102.

[0073] FIG. 7 illustrates a manage organization process 104 (which can be performed by the organization module 42 and/or the user module 50) which includes an invite organization/user process 105, a create organization process 106, a maintain organization process 108, a create user process 110, and a maintain user process 112.

[0074] FIG. 8 illustrates the create organization process 106, which can be included in the manage organization process 104. The create organization process 106 can be performed by any of the participants 24 using the organization module 42. The create organization process 106 includes a create organization task 148, an update organization profile task 150, an edit organization task 152, and an activate organization task 156. An update user profile task 162 can also be performed, as further described with respect to FIG. 22.

[0075] FIG. 9 illustrates a create organization form that can be associated with the create organization task 148. One or more of the participants 24 can access the create organization form through the organization module 42. The participant 24 can then enter the requested information, such as business information, primary contact information, tax information, and banking information. For example, the participant 24 can enter an organization or company name, address, city, state, zip code, county, bank account number, bank routing number, and federal employer identification number (FEIN). The participant 24 can also enter user information associated with the organization, such as user name (first and last), title, email address, and phone number. In some embodiments, the first user of the participating organization 24 that enters his or her personal information as the user information associated with the organization can be deemed an administrator for that participant 24 and can be given more access to the information for the participant than subsequent users. The CPMS 10 can use comprehensive role-based security so that project participants only see information tailored to their specific needs in the project. In some embodiments, once an organization is registered in the CPMS 10, the organization can receive payments for any projects managed by the CPMS 10.

[0076] FIG. 10 illustrates a notification that can be transmitted during the update user profile task 162. Unless explicitly stated otherwise, the terms "system notification," "notification," or "system message" as used herein and in the appended claims refer to any form of communication with a participant 24, such as an email message, a screen notice, a text message, a voice message, etc. The system notification of FIG. 8 includes a username and a temporary password for the first user of the participant 24.

[0077] FIG. 11 illustrates a notification that can be transmitted during the update organization profile task 150. The notification of FIG. 11 can be sent to the administrator for the participant 24. The notification includes a statement requesting the recipient to update the organization profile, add users before participating in a project, and provide bank details.

[0078] FIG. 12 illustrates an edit organization form that can be associated with the edit organization task 152. Each participant 24 can access the edit organization form through the organization module 42. The participant 24 can modify the existing information, such as business information, primary contact information, tax information, and banking information. In some embodiments, the first user of the participating organization 24 that entered his or her information as user information associated with the organization is the only user given access to the edit organization form.

[0079] FIG. 13 illustrates an activate organization notification that can be transmitted during the activate organization notification task 156. The notification of FIG. 13 includes a statement that the details of the organization have been updated and a request that the organization be validated and activated.

[0080] FIG. 14 illustrates an activate organization form that can be associated with the activate organization task 156. The form of FIG. 14 includes a listing of participants 24 (e.g., including the organization name, its role in the construction process, the ability to select participants 24, and the ability to view information for the participants 24). The form of FIG. 14 also includes a "Find" feature, the ability to specify the type of participant 24, and the ability to decline/deactivate selected organizations and to provide a reason for the decline/deactivation.

[0081] FIG. 15 illustrates an organization activated notification that can be transmitted during the organization activated task 160. Similarly, FIG. 16 illustrates an organization deactivated notification that can be transmitted during the organization declined task 158.

[0082] FIG. 17 illustrates a maintain organization process 108, which can be included in the manage organization process 104. The maintain organization process 108 can be used by the organizations themselves or by other participants to maintain the accuracy of the contact information, bank account information, or any other type of information necessary for the construction payment process. The maintain organization process 108 can be performed by the participants using the organization module 42. The maintain organization process 108 of FIG. 17 includes a browse organization task 164, an edit organization task 166, an organization updated notification task 168, and a view organization task 120.

[0083] FIG. 18 illustrates a view organization screen that can be associated with the view organization task 120. The view organization screen includes business information and primary contact information for an organization.

[0084] FIG. 19 illustrates a browse organization screen that can be associated with the browse organization task 164. The browse organization screen includes a list of participants, including the organization name, the organization role in the construction process, the primary contact, and the phone number. The browse organization screen also includes a "Find" feature and links for viewing additional information about each participant. In some embodiments, the browse organization screen can be used by a homebuilder to view its preferred subcontractors or material suppliers.

[0085] FIG. 20 illustrates an edit organization form that can be associated with the edit organization task 166. The participant can edit the existing information, such as business information, primary contact information, tax information, and banking information. In some embodiments, the first user of the organization that entered his or her information as the primary contact information is the only user given access to the edit organization form.

[0086] FIG. 21 illustrates an organization profile updated notification that can be transmitted during the organization updated notification task 168. The notification of FIG. 21 includes information regarding the updated profile for the participant along with a name of the primary user or administrator for the participant.

[0087] FIG. 22 illustrates a create user process 172, which can be included in the manage organization process 104. The create user process 172 can be used each time a new user at an existing organization is created in order to give the new user the appropriate access to the CPMS 10 (e.g., the appropriate security levels with a user identification and password). The create user process 172 can also be used to update user profiles. The

create user process 172 can be performed by any of the participants 24 using the organization module 42. The create user process 172 of FIG. 22 includes a create user task 174 and an update user profile notification task 176.

[0088] FIG. 23 illustrates a create user form that can be associated with the create user task 174. In some embodiments, the create user form can be used to add users after the primary user or administrator has already been created for the participant. The new user can enter personal information, security information (e.g., user name and password), email notification preferences, and security clearance levels (e.g., whether the user can manage projects and/or sign documents). For example, a new user can enter a user name (e.g., first and last name), a title, an email address, and a phone number.

[0089] FIG. 24 illustrates an update user profile notification that can be transmitted during the update user profile notification task 176. The notification of FIG. 24 includes a statement that the user has been added as a member of the organization, along with the user's security information (e.g., user name and a temporary password).

[0090] FIG. 25 illustrates a maintain user process 178, which can be included in the manage organization process 104 and can continue from FIG. 22 at A. The maintain user process 178 can be used to browse the users in each organization and to view, edit, and update the users in each organization. The maintain user process 178 can be performed by any of the participants using the organization module 42. The maintain user process 178 of FIG. 25 includes a browse users task 180, an edit user task 182, a user profile updated notification task 184, and a view user task 186.

[0091] FIG. 26 illustrates a view user screen that can be associated with the view user task 186. The view user screen of FIG. 26 includes the user's personal information, email notification preference, and security clearance level.

[0092] FIG. 27 illustrates a browse users screen that can be associated with the browse users task 180. The browse users screen of FIG. 27 includes a list of one or more users for each participant, and can include the users' names, email addresses, and phone numbers. The browse users screen can also include links to edit the information for each user.

[0093] FIG. 28 illustrates an edit user form that can be associated with the edit user task 182. A user can provide personal information, email notification preferences, and security clearance levels.

[0094] FIG. 29 illustrates a user profile updated notification that can be transmitted during the user profile updated notification task 184.

[0095] Returning to FIG. 6, a first step of the manage project process 97 can include an interface project/contracts process 98. As described above with respect to FIGS. 2 and 3, the interface project/contracts process 98 can include uploading project data and/or contract data from an external system of the homebuilder to the CPMS 10 via the interface module 92. For example, the project data and contract data can be uploaded to the CPMS 10 from an ERP system of the homebuilder 74.

[0096] FIG. 30 illustrates a create project process 99, which can be included in the manage project process 97. The create project process 99 can be performed by the homebuilder 74 using the project module 28 to initiate a new project in the CPMS 10. The create project process 99 of FIG. 30 includes a create project task 190, a project creation notification task 195, a project user access task 196, and a project responsibilities task 197. In embodiments that include document compliance functionality such as described above, the create project task 190 may further include creating project compliance requirements (task 191), creating project approval requirements (task 192), creating project document requirements (task 193), and/or creating other project requirements (task 194).

[0097] In some embodiments, the CPMS 10 can initiate a new project based on project data and/or contract data uploaded to the CPMS 10 from an external system of the homebuilder 74. In other embodiments, in place of uploading data or in addition to uploading data to the CPMS 10, the homebuilder can manually enter data and/or verify data. FIGS. 31 and 32 illustrate a create project form that can be associated with the create project task 190. A homebuilder 74 can use the create project form of FIGS. 31 and 32 to provide project identification information, project funding information, project owner information, project architect information, and site information. A homebuilder 74 can also use the create project form of FIGS. 31 and 32 to verify project and/or contract information uploaded from an external system. For example, a homebuilder 74 can use the create project form of FIGS. 31 and 32 to enter and/or verify a document template for a lien waiver, a site description, a site address, a site state, a site county, a contract amount, and/or a contract date.

[0098] FIG. 33 illustrates a create compliance requirement form. A homebuilder 74 can use the create compliance requirement form to identify situations in which additional documents, information, or approvals are required before payment is effectuated. The

homebuilder 74 can indicate the scope of the requirement (e.g. whether the requirement applies to a specific project, a specific vendor or subcontractor, or to all projects and payees associated with the homebuilder 74). The homebuilder 74 can identify the object type (e.g., an invoice, a check, a sworn statement, or a lien waiver) and can indicate the requirement associated with that object. The homebuilder 74 can also use this form to indicate a time period when the requirement will be in effect such as an effective date, an expiration date, or an initiating event. The homebuilder 74 can also set deadlines for satisfying the requirement.

[0099] As described above in reference to FIG. 3, the CPMS 10 can be configured to hold payment until an additional document is received. Using the create compliance requirement form of FIG. 33, a homebuilder 74 can identify the additional document and check the "Required for Payment" box. The create compliance requirement form can also be used to set a time for sending a first and second notice of the non-compliant item to the applicable party.

[00100] Also as described above in reference to FIG. 3, a homebuilder 74 can require that certain requested documents be approved before payment is effectuated. Using the create compliance requirement form of FIG. 33, the homebuilder 74 can identify the document ("Object Type") and set an approval requirement. The create compliance requirement form of FIG. 33 also allows the homebuilder 74 to set an approval workflow or identify multiple participants that must approve the document before payment is effectuated.

[00101] Once created, compliance requirements can be monitored and managed through a manage compliance requirements form such as illustrated in FIG. 34. The homebuilder 74 selects the scope and/or initiating event and a list of all applicable compliance requirements is displayed. The homebuilder 74 can add, remove, or edit the requirements from this list.

[0100] FIG. 35 illustrates a project created notification that can be transmitted during the project creation task 195 of FIG. 30. The notification of FIG. 35 includes a statement that the homebuilder 74 has created a new project, along with a link to a screen that allows users to be assigned to the project.

[0101] FIG. 36 illustrates a process for assigning user roles for a project and, in some embodiments, may overlap with the create project task 190 and the project user access task 196 from FIG. 30. When a new user is created (step 201), the user is associated with an

organization (step 203) and given a role within that organization (step 205). When a new project is created (step 207) and the user is assigned to that project (step 209), the system in this example automatically associates the user's role within the organization with the role that the user will have in the project.

[0102] FIG. 37 illustrates a project user access screen that can be associated with the project user access task 196. The project user access screen includes the project name, the project number, the homebuilder name, and a list of users for a particular project and/or a particular organization. The users can be identified by name and username, and, in some embodiments, can be deemed a project manager or a signer. This screen displays a list of users currently associated with a project and the respective roles currently assigned to the users. This list of users and their assigned roles can be modified from this screen. For example, if a compliance requirement is created with the create compliance requirement form of FIG. 33, "Sam Jenkins" can be assigned a "compliance" role. If a requirement is created that requires approval before a payment is effectuated, "Steve Johnson" can be given the role of "approver" for this project.

[0103] When a project role or responsibility is created or changed, a notification is sent to the appropriate user. FIG. 38 illustrates a project responsibilities notification that can be transmitted during the project responsibilities notification task 197 of FIG. 30. The notification of FIG. 38 can include a statement that a user's responsibilities with respect to a project have been modified.

[0104] As described above with respect to FIGS. 2 and 3, a homebuilder can use the CPMS 10 to exchange payments for electronically signed lien waivers. FIG. 39 illustrates a lien waiver payment exchange process 200 that can be performed by the CPMS 10. As stated above in reference to the examples illustrated in FIGS. 2-5, although in this example builder 74 is a homebuilder, the functionality of CPMS 10 described in FIG. 39 can also be applied to builders engaged in non-residential construction. Furthermore, although this example describes an exchange between a homebuilder 74 and a vendor, the second participant can also be of another type such as a subcontractor or a materials supplier.

[0105] As shown in FIG. 39, to initiate a lien waiver payment exchange, the CPMS 10 can create a payment order (step 202) based on information specified by the homebuilder 74. As described above with respect to FIGS. 2 and 3, the homebuilder 74 can manually enter the payment information into the CPMS 10, or the payment information can be uploaded from an external system of the homebuilder 74 (e.g., an ERP system) via the

interfaces module 92. Each payment order managed by the CPMS 10 includes information that links the line item with the correct project and the correct contract to be paid. The payment information associated with a payment order can include a project name/development, project owner information, a project identifier, a transaction identifier, a contract identifier, and a payment amount.

[0106] The payment orders are then stored in the CPMS 10 in the context of the project and the contract to which they relate. The CPMS 10 maintains an organization/user hierarchy independent of payment transactions. The hierarchy provides the structure for storing payments as well as the user/permission structure that determines who the authorized person from any given organization is for signing and/or notarizing purposes and that controls access to information managed by the CPMS 10. The project/contract data structures can also specify the information required to complete the correct lien waiver form for a particular vendor 93.

[0107] As shown in FIG. 39, once the payment order information is received by the CPMS 10, the CPMS 10 matches the payment order to a project and/or contract using the project and contract information previously obtained from the homebuilder 74 (e.g., manually from the homebuilder 74 or uploaded from an external system of the homebuilder 74) (step 204). The vendor 93 is then notified (e.g., via the notifications manager 40) to sign either a partial or a final lien waiver via an electronic signature engine of the CPMS 10 (step 206). The CPMS 10 generates the needed lien waiver and the vendor 93 electronically signs the lien waiver (step 208). In some embodiments, the CPMS 10 can generate the needed documents based on a lien waiver template specified by the homebuilder 74 (e.g., manually and/or uploaded from an external system). Once the vendor 93 signs the lien waiver, the CPMS 10 stores the signed lien waiver in the electronic holding bin/escrow 68 (step 210).

[0108] As described above with respect to FIG. 3, in some embodiments, the CPMS 10 can optionally include a document management module 88 and a compliance management module 90 that allows the CPMS 10 to provide compliance management. For example, when the CPMS 10 includes a document management module 88 and a compliance management module 90 (or includes an activated or "turned-on" document management module 88 and compliance management module 90), the CPMS 10 can obtain document requirements from the homebuilder 74. The document requirements can include a list of documents the homebuilder 74 requires from the vendors 93, deadlines for receiving the requested documents, actions to be taken if the requested documents are not received from

a particular vendor 93, etc. In some embodiments, the document or compliance requirements also specify templates or specifications for the requested documents. The CPMS 10 can use the templates or specifications to generate the requested documents. As described above, the document or compliance requirements can be set at an organization level and/or a project level. In some embodiments, the homebuilder 74 can directly enter the document requirements into the CPMS 10. In other embodiments, the homebuilder 74 can load document requirements to the CPMS 10 via an external system (e.g., an ERP system) using the interfaces module 92 of the CPMS 10. After the homebuilder 74 provides document requirements to the CPMS 10, the vendor 93 can upload requested documents to the CPMS 10 for approval by the homebuilder 74.

[0109] After the homebuilder 74 provides document requirements and payment orders or data to the CPMS 10, the CPMS 10 can prompt the vendors 93 to enter (sign, notarize, submit, etc.) any missing compliance documents that are required before a vendor can receive a payment in addition to prompting the vendor 93 to sign a lien waiver. In some embodiments, the CPMS 10 can generate the compliance documents (e.g., based on the templates and/or specifications specified by the homebuilder 74) and can present the generated documents to the vendor 93 for approval and/or signature.

[0110] Therefore, as shown in FIG. 39, if the CPMS 10 provides compliance management, the CPMS 10 can perform a compliance check prior to initiating payment to a vendor 93 (step 212). As described above with respect to FIG. 3, if a vendor 93 is noncompliant with the required documents and the homebuilder 74 has selected to hold payments when a vendor 93 is deemed noncompliant, the CPMS 10 can hold a payment to the vendor (e.g., even if the vendor 93 signs the requested lien waiver).

[0111] Once the lien waiver is signed and stored (steps 208 and 210) and the vendor's compliance with the document requirements or other requirements is verified (step 212), the signed lien waiver is queued for payment (step 214). In some embodiments, the CPMS 10 automatically disburses funds to the vendor 93 via ACH or another payment network. After the payment is queued and/or initiated, the CPMS 10 allows the homebuilder 74 to view the signed lien waiver. However, in some embodiments as described above, the CPMS prevents the homebuilder 74 from viewing the signature on the lien waiver until receipt of the payment to the vendor is confirmed by the ACH or other payment network (step 216).

[0112] After receipt of the payment has been confirmed, the CPMS 10 releases the signed lien waiver from the electronic holding bin 68 (step 218). In some embodiments, the

CPMS 10 also sends a receipt of payment (via email or the CPMS 10, such as the notifications manager 40) to the vendor 93. In addition, the CPMS 10 sends the homebuilder 74 a payment record (step 220). In some embodiments, the CPMS 10 transmits the payment record to an external system of the homebuilder 74 (e.g., an ERP system) through the interfaces module 92.

[0113] Although the example of FIG. 39 is related to a homebuilder receiving a signed lien waiver from a vendor, the participants and documents can vary. For example, the payer may be a property owner or a non-residential builder and the payee can be a subcontractor or materials supplier. Similarly, the payment distribution of step 214 may be initiated through an automated clearing house (ACH) as shown in FIG. 39 or through some other form of payment. Furthermore, the steps may be added, removed, or arranged in a different order than as shown in FIG. 39. For example, the compliance check at step 212 may be removed in some systems or optional in some projects. Similarly, some systems may release the signed document (step 218) immediately after payment is initiated (step 214); thereby eliminating the delay of step 216.

[0114] As described above with respect to FIG. 2, the CPMS 10 can be configured to support a "specified billing" environment in place of or in addition to being configured to support a "specified payment" environment, as shown in FIG. 39. For example, instead of the homebuilder 74 specifying a payment for a vendor 93, as shown in FIG. 39, the homebuilder 74 can use the CPMS 10 to generate an invoice for a vendor 93 that includes a requested payment amount. The vendor 93 can view and approve or decline the invoice via the CPMS 10, but cannot modify the invoice. Once the vendor 93 approves the invoice, the CPMS 10 can prompt the vendor 93 to sign a lien waiver in order to initiate the approved payment. Once the vendor 93 signs the lien waiver (and, optionally, is compliant with the document requirements specified by the homebuilder 74), the CPMS 10 initiates the payment to the vendor 93, as shown in FIG. 39.

[0115] In addition, the CPMS 10 can be configured to support an invoicing environment, wherein a vendor 93 uses the CPMS 10 to create an invoice and submit the invoice to the homebuilder 74 for approval. Once the homebuilder 74 approves the invoice, the CPMS 10 prompts the vendor 93 to sign a lien waiver in order to initiate the approved payment. Once the vendor 93 signs the lien waiver (and, optionally, is compliant with the document requirements specified by the homebuilder 74), the CPMS 10 initiates the payment to the vendor 93, as shown in FIG. 39.

[0116] It should be understood that in some embodiments a residential construction project may include multiple properties (e.g., lots in a single subdivision). When a construction project includes multiple properties, the CPMS 10 can initiate a single payment to a particular vendor 93 wherein a single payment covers multiple properties or can initiate separate payments for each property. Similarly, the CPMS 10 can generate one lien waiver for a particular vendor that is associated with multiple properties (e.g., lien waiver by subdivision) or can generate separate lien waivers for each property (e.g., lien waiver by lot).

[0117] It should also be understood that the CPMS 10 can create a project that includes multiple properties. Therefore, when a vendor 93 registers with the CPMS 10 and/or the project, the vendor 93 is automatically registered and available to be associated with each property included in the project. In some embodiments, once a vendor 93 is registered with the CPMS 10, the homebuilder 74 can use the CPMS 10 to assign particular vendors 93 to particular projects.

[0118] In some embodiments, the CPMS 10 can also manage budgets or schedules of values associated with a particular project, property, vendor 93, etc. For example, a homebuilder 74 (and/or a vendor 93) can input a budget using the CPMS 10. The homebuilder 74 can manually enter budget information into the CPMS 10 or the CPMS 10 can obtain budget information from an external system of the homebuilder 74 via the interfaces module 92. Once the CPMS 10 receives budget information, it can use the budget information to generate documents (e.g., invoices, lien waivers, etc.), verify payment amounts, etc. For example, as described above with respect to FIG. 2, in some embodiments, a vendor 93 can use the CPMS 10 to generate and submit an invoice. To generate an invoice, the vendor 93 can specify a payment amount or a percent complete. If the vendor 93 specifies a percent complete, the CPMS 10 can automatically generate an invoice by calculating a payment based on a budget amount and the specified percent complete. The CPMS 10 can also verify a payment amount specified by a homebuilder 74 against a budget amount. Change orders to the budget can also be provided to (e.g., manually and/or uploaded from an external system via the interfaces module 92) and managed through (e.g., approved) the CPMS 10. In some embodiments, the CPMS 10 can also allow an inspector to input inspection information, such as percent complete information, which the CPMS 10 can use to generate and/or verify invoices, lien waivers, payment amounts, etc.

[0119] It should be understood by one of ordinary skill in the art that constructions and methods described above are illustrative and not limiting. Other configurations, designs, and uses are possible. For example, various embodiments of the CPMS might be applied to a "homebuilder" engaged in residential construction or a builder engaged in non-residential construction. Furthermore, the payer may not be the builder, but rather, for example, a bank or property owner. In such cases, builder 74 could be a payee. Various payees may also include, for example, vendors, material suppliers, and subcontractors. Also, although the above examples describe a lien waiver exchange, it may be possible to apply this methodology to other types of documents. Various features and advantages of the invention are set forth in the following claims.

CLAIMS

1. A computer implemented method of effectuating a payment related to a construction project comprising:

creating a payee user record for a payee on a computer readable memory;

electronically transmitting

an electronic notification to a payee of a pending payment and

a request for an electronically signed document from the payee;

flagging the payee user record as noncompliant if all requested documents, including the requested electronically signed document, are not stored in the computer readable memory;

flagging the payee user record as compliant if all requested documents are stored on the computer readable memory

receiving the electronically signed document from the payee;

storing the electronically signed document in a computer readable memory; and

initiating payment when the payee user record is flagged as compliant.

2. The method according to claim 1 further comprising creating a payment order prior to transmitting the electronic notification.

3. The method according to claim 2 further comprising matching the payment order to a project.

4. The method according to claim 1 further comprising releasing the electronically signed document to a payer only after payment has been initiated.

5. The method according to claim 1 wherein the act of initiating payment is executed by a computer processor automatically upon receipt of the electronically signed document from the payee.

6. The method according to claim 1 further comprising:

defining a list of required information that must be stored in the computer readable memory before payment will be initiated, wherein the list of required information includes the all requested documents;

electronically transmitting a second notification to the payee identifying what required information is not currently stored in the computer readable memory; and

flagging the payee user record as compliant after verifying that all required information is stored in the computer readable memory.

7. The method according to claim 6 wherein the list of required information includes at least one previously requested electronically signed document.

8. The method according to claim 1 further comprising receiving a compliance setting from the payer designating whether to delay the act of initiating payment until the payee user record is flagged as compliant.

9. The method according to claim 1 further comprising:

receiving an electronic payment request from the payee;

displaying the payment request to the payer; and

receiving approval from the payer of the payment request,

wherein the act of creating a payment order is performed in response to receiving approval of the payment request.

10. The method according to claim 1 wherein the electronic notification of the pending payment includes an electronic invoice.

11. The method according to claim 1 wherein the act of initiating payment includes electronically communicating with an automated clearing house.

12. The method according to claim 1 wherein the act of initiating payment includes automatically effectuating an electronic funds transfer.

13. The method according to claim 1 wherein the act of initiating payment includes printing a check to be delivered to the payee.

14. The method according to claim 1 further comprising generating an electronic receipt and transmitting the receipt to the payee.

15. The method according to claim 1 further comprising generating an electronic payment record and transmitting the electronic payment record to the payer.

16. The method according to claim 1 wherein the payer is a general contractor.

17. The method according to claim 1 wherein the payee is a subcontractor or a vendor of building materials.

18. The method according to claim 1 wherein the electronically signed document is a lien waiver.

19. A construction payment management system comprising:

at least one computer readable memory;

a software enabled user interface; and

a processor configured to

create a payee user record;

display to a payee the user interface, an electronic notification of a pending payment, and a request for an electronically signed document,

store the electronically signed document in the at least one computer readable memory,

flag the payee user record as noncompliant when one of a plurality of requested documents is not stored in the at least one

computer readable memory, wherein the plurality of requested documents includes the electronically signed document,

flag the payee user record as compliant when all of the requested documents are stored in the at least one computer readable memory, and

initiate a payment when the user record is flagged as compliant.

20. The construction payment management system according to claim 19 wherein the processor is further configured to create a payment order before displaying the electronic notification of the pending payment.

21. The construction payment management system according to claim 19 wherein the software enabled user interface is viewable on a display and editable through a keyboard, the display and the keyboard being remote from the construction payment management system and associated with the payee.

22. The construction payment management system according to claim 19 wherein the software enabled user interface is accessible on a plurality of networked computer terminals.

23. The construction payment management system according to claim 22 wherein the software enabled user interface is a web-based application accessible on a plurality of computer terminals connected to the Internet.

24. The construction payment management system according to claim 19 wherein the processor is further configured to match the payment order to a project.

25. The construction payment management system according to claim 19 wherein the processor is further configured to display the electronically signed document to a payer via the user interface only after payment has been initiated.

26. The construction payment management system according to claim 19 wherein the processor is configured to initiate payment automatically upon receipt of the electronically signed document.

27. The construction payment management system according to claim 19 wherein the processor is further configured to:

access a list denoting what data must be stored in the at least one computer readable memory before the payee user record will be flagged as compliant;

display a second notification to the payee via the user interface describing what data from the list is not currently stored in the computer readable memory; and

flag the payee user record as compliant after verifying that all data from the list is stored in the at least one computer readable memory.

28. The construction payment management system according to claim 27 wherein the list includes at least one previously requested electronically signed document.

29. The construction payment management system according to claim 19 wherein the processor is further configured to receive a compliance setting from the payer designating whether to delay the act of initiating payment until the payee user record is flagged as compliant.

30. The construction payment management system according to claim 19 wherein the processor is further configured to:

receive an electronic payment request from the payee via the user interface;

display the payment request to the payer via the user interface; and

receive approval of the payment request from the payer via the user interface before creating the payment order.

31. The construction payment management system according to claim 19 wherein the electronic notification of the pending payment includes an electronic invoice.

32. The construction payment management system according to claim 19 further comprising a communication interface between the processor and an automated clearing house, wherein the processor is configured to initiate payment through the automated clearing house via the communication interface.

33. The construction payment management system according to claim 32 wherein the communication interface includes a telephone line.

34. The construction payment management system according to claim 32 wherein the communication interface includes an Internet connection.

35. The construction payment management system according to claim 19 further comprising an electronic interface between the processor and a bank, wherein the processor is configured to initiate payment by requesting an electronic funds transfer at the bank.

36. The construction payment management system according to claim 19 further comprising a printer, wherein the processor is configured to initiate payment by printing a check payable to the payee.

37. The construction payment management system according to claim 19 wherein the processor is configured to initiate payment by displaying payment instructions to the payer via the user interface.

38. The construction payment management system according to claim 19 wherein the processor is further configured to generate an electronic receipt and display the receipt to the payee via the user interface.

39. The construction payment management system according to claim 38 wherein the processor is further configured to store the electronic receipt in the at least one computer readable memory.

40. The construction payment management system according to claim 19 wherein the processor is further configured to generate an electronic payment record and display the electronic payment record to the payer via the user interface.

41. The construction payment management system according to claim 40 wherein the processor is further configured to store the electronic payment record in the at least one computer readable memory.

42. The construction payment management system according to claim 19 wherein the payer is a general contractor.

43. The construction payment management system according to claim 19 wherein the payee is a subcontractor or a supply vendor.

44. The construction payment management system according to claim 19 wherein the electronically signed document is a lien waiver.

45. A construction payment management system comprising:
at least one computer readable memory;
a software enabled user interface; and
a processor configured to
create a payment order,

display to a payee via the user interface an electronic notification of a pending payment and a request for an electronically signed document,

receive an electronically signed document from the payee via the user interface,

store the electronically signed document in the at least one computer readable memory and temporarily prevent a payer from accessing the electronically signed document,

receive confirmation from the payer via the user interface that payment has been initiated, and

allow the payer to access the electronically signed document.

46. A computer implemented method of effectuating a payment in a construction project comprising:

creating a payment order;

electronically transmitting an electronic notification to a payee of a pending payment and a request for an electronically signed document from the payee;

receiving an electronically signed document from the payee;

storing the electronically signed document in a computer readable memory;

temporarily preventing a payer from accessing the electronically signed document;

receiving confirmation from the payer that payment has been initiated, and

allowing the payer to access the electronically signed document.

47. The method according to claim 46, further comprising initiating payment by check.

48. The method according to claim 46, further comprising initiating payment by wire transfer.