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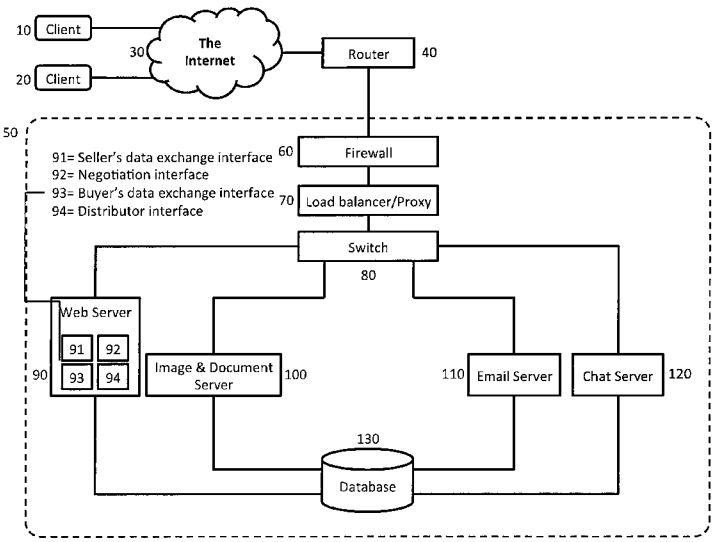
(54) **Title**: METHOD AND APPARATUS FOR NEGOTIATION, AND TRADE WITH DIGITAL CONTENT

Figure 1– Technology



(57) **Abstract**: An automatic negotiation system (200) configured to handle negotiation related to digital content between users interacting with the system, the system comprises a seller interface (91) for at least one seller (210) to access the system (200), a buyer interface (93) for at least one buyer (250) to access the system (200), wherein the seller interface (91) is configured to expose a request for the digital content (230), or from a seller receive the digital content (230) and associated terms (220) to the system (200). The buyer inter- face (93) is configured to receive the request for digital content (230), or expose the digital content (230) and the associated terms (220) to the potential buyer (250), wherein a request for a modified content (230) and/or terms (220) is received via the buyer interface (93) to the system (200) which request causes the system (200) to register the deviation and provide the modification request via the seller interface (91) to the seller (210), and which enable the seller (210) to input a modified content (230) and/or associated terms (220) in accordance with the buyers requested modified content (230) and/or terms (220) to the system (200) via the seller interface (91), which causes the system (200) to register the modified content (230) and/or associated terms (220), such that the modified content (230) and/or associated terms (220) fulfil the buyers (250) requested modified content (230) and/or terms (220).

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Method and apparatus for negotiation, and trade with digital content

Embodiments of the present invention are described herein in the context of a system, method, computer program, and computer program product for negotiation, and trade with digital content. Those of ordinary skill in the art will realize that the following detailed description of the present invention is illustrative only, and is not intended to be in any way limiting.

BACKGROUND

Trade with digital content in distance selling is growing through the use of Internet. There are established trade patterns between companies, between individuals and between companies and individuals. Digital content being traded include but is not limited to sounds, pictures, texts, software and information.

When digital content being traded does not have a clear specification of content and quality, or even a set market price, new requirements arise in distance selling. Solutions for helping buyers and sellers of such digital content are required. The solutions need to resolve pricing, assessment of content and quality among other things. In distance selling including digital content, there is a significant risk that buyers and sellers do not come to an agreement due to information asymmetry, lack of trust and slow responsiveness in the process. The risk is especially significant when trading digital content with a low degree of specification.

If buyers and sellers, in spite of having the necessary pre-requisites for trade, do not reach an agreement there will be a market inefficiency. This market efficiency is expected to grow as distance selling of this kind of material is expected to grow over time.

Established and known solutions for trade with such digital material is not satisfactory. Means today include but are not limited to email for negotiation and auctions for setting price. Means for specifying content and quality include previews where material is shown in part.

SUMMARY

It is an object of the invention to address how to automatically handle negotiation related to trade with digital content.

According to one aspect, an automatic negotiation system is configured to handle negotiation related to digital content between users interacting with the system. The system comprises a seller interface for at least one seller to access the system. The system further comprises a buyer interface for at least one buyer to access the system, wherein the seller interface is configured to expose a request for the digital content, or from a seller receive the digital content and associated terms to the system. The system further comprises the buyer interface, which is configured, to receive the request for digital content, or expose the digital content and the associated terms to the potential buyer. The system further comprises a request for a modified content and/or terms, which is received via the buyer interface to the system, which request causes the system to register the deviation and provide the modification request via the seller interface to the seller, and which enable the seller to input a modified content and/or associated terms in accordance with the buyers requested modified content and/or terms to the system via the seller interface, which causes the system to register the modified content and/or associated terms, such that the modified content and/or associated terms fulfil the buyers requested modified content and/or terms.

According to another aspect, a method in an automatic negotiation system handling of negotiation related to digital content between users is provided. The method comprises exposing a request for, or from a seller receiving a digital content and associated terms via a seller interface. The method further comprises receiving the request from, or exposing the digital content and the associated terms via a buyer interface for a potential buyer. The method further comprises requesting a modified content and/or terms is received via the buyer interface to the system causes the system to register the deviation and provide the modification via the seller interface to the seller. The method further comprises enabling the seller to input a modified content and/or associated terms in accordance with the buyers requested modified content and/or terms to the system via the seller interface. The method further comprises registering by the system the modified content and/or associated terms, such that the modified content and/or associated terms fulfil the buyers requested modified content and/or terms.

According to another aspect, a computer program, comprising computer readable code means is provided. The computer program comprises, when run in an automatic negotiation system according to above described and other embodiments, causes the automatic negotiation system to perform the corresponding method.

The above system, method and computer program may be configured according to various optional embodiments. A possible embodiment is repetition of the request for modified digital content and/or terms until the modified content and/or associated terms fulfill the buyers requested modified digital content and/or terms, and the repetition of request or repetition of modification of content and/or terms is initiated via the buyer interface (93) or the seller interface (91). According to another embodiment an arrangement for preview creation, wherein a preview of the digital content is created at reception to the system and exposed to the potential buyer in place of the original digital content. According to another embodiment the preview is manually created on a client computer, by retrieval of a tool via the seller interface, thus enabling a seller to create the preview before transmission of any digital content or preview to the seller interface. According to another embodiment the preview creation is iterated such that a modified preview is created. According to another embodiment the preview of the digital content has an intermediate format different than the original format of the digital content. According to another embodiment the system creates profiles of buyers and sellers, and when a relevance is determined above a set value, the profile is matched with the request. According to another embodiment the system is adapted to interact with a payment unit. According to another embodiment the system is adapted to deliver the digital content via a delivery unit. According to another embodiment the interaction with the seller interface and the buyer interface is performed via at least one of: instant messaging, e-mail, or web. According to another embodiment a portion of the system is arranged for operation in second domain separated from the system, where the portion of the system is provided via a distributor interface.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference will now be made in detail to implementations of the present invention as illustrated in the accompanying drawings.

For the sake of clarity, not all of the routine features of the implementations described herein are shown and described. It will, of course, be appreciated that in the development of any such actual implementation, numerous implementation-specific decisions must be made in order to achieve the developer's specific goals, such as compliance with application- and business-related constraints, and that these specific goals will vary from one implementation to another and from one developer to another. Moreover, it will be appreciated that such a development effort might be complex and time-consuming, but would nevertheless be a routine undertaking of engineering for those of ordinary skill in the art having the benefit of this disclosure.

In accordance with the present invention, the components, process steps, and/or data structures may be implemented using various types of operating systems, computing platforms, computer programs, and/or general purpose machines.

Figure 1	Technology
Figure 2	Method
Figure 3	Computer
Figure 4	Distributed solution
Figure 5	Flowchart Terms Modification
Figure 6	Flowchart Content Submission
Figure 7	Flowchart Preview Creation
Figure 8	Example Negotiation Interface
Figure 9	Example buyer's data exchange interface
Figure 10	Example seller's data exchange interface
Figure 11	Example 1 Preview
Figure 12	Example 2 Preview
Figure 13	Example 3 Preview
Figure 14	Block diagram of matching

DETAILED DESCRIPTION

Definitions

Buyer. A user engaging in a negotiation regarding the trade of digital content.

Cluster. A collection of computer servers working together for a unified purpose. A computer inside a cluster is commonly called a node. The computers can be physical or virtual, and a physical server can host multiple virtual ones. A load balanced cluster is a cluster, with an additional load balancer in front of it. The load balancer directs network traffic and sends it to the node with the smallest traffic load.

Descriptive Data. Information that describes a user or characteristics of a user. For example, descriptive data might include a first, and last name. Or it might include elements that describe attributes of the user, such as gender, marital status or occupation. It might also include elements that describe prior activities using the invention, evaluations from other users, and more.

Digital content. A digital material, a file, digitally stored information or similar embodiment made available within this invention for the purpose of trade. It may be in any of a wide variety of acceptable file formats, including, but not limited to, text, audio, video, graphics, and other common media formats.

Interface. Any mechanism by which an external individual, user or external computer can obtain and provide data, respectively to or from the database of the present invention. One common example of the interface is a web site. Other examples might include an e-mail message, a telephone voice message, or a paper report.

Internet. A collection of interconnected (public and/or private) networks that are linked together by a set of standard protocols (such as TCP/IP and HTTP) to form a global, distributed network. (While this term is intended to refer to what is now commonly known as the Internet, it is also intended to encompass variations that may be made in the future, including changes and additions to existing standard protocols.)

Negotiation competition. The act of introducing one more party in a negotiation, and /or offering the negotiating parties an increased number of means for trading the digital content at hand.

Negotiation interface. One embodiment of the interface uses for presenting core processes. Supporting functions and post-agreement functions may be included.

Preview. A representation, an image of the digital content, with or without modifications. Modifications can be added in order to hide the true representation of the data, with the purpose of allowing a counterpart to preview the content without revealing the full content.

Seller. A user providing digital content for sale.

Terms. Specification, price, and other conditions defining the trade of digital content.

Terms revision identifier. A revision identifier unique to the negotiation. The revision identifier is used to ensure that the terms that is being agreed upon by the negotiating parties is the latest, and newest set of terms of agreement.

User. An individual, business, organization or other entity who has registered in the system. In an exemplary implementation of the system, a recognized member with a proprietary method for login and verification of identity. The definition of user could include non-registered user also, having the same characteristics but not being verified.

Web site. A computer system that serves informational content over a network using the standard protocols of the World Wide Web. As used herein, the term is generally intended to encompass both (i) the hardware/software server components that serve the informational content over the network, and (ii) the "back end" hardware/software components, including any non-standard or specialized components, that interact with the server components to perform services for Web site users.

Technology

Figure 1 illustrates the general architecture of a system that operates in accordance with one embodiment of the present description. As shown in figure 1, a plurality of user interface devices “clients” 10 and 20 are connected to an apparatus 50 via the Internet 30, or other available means of electronic communication. Parts of the apparatus may be installed in clients 10 and 20. Such installation may be done from the apparatus or from a third party client Figure 4, 25.The user interface may be any device capable of pre-

senting data, including, but not limited to, computers, cellular telephones, television sets or hand-held "personal digital assistants." As used herein, the term "Internet" generally refers to any collection of distinct networks working together to appear as a single network to a user. The term refers to the so-called World Wide Web or "network of networks" that are connected to each other using the Internet protocol (IP) and other similar protocols. The Internet provides file transfer, remote log in, electronic mail, news and other services. As described herein, the exemplary public network of figure 1 is for descriptive purposes only. Although the description may refer to terms commonly used in describing particular public networks such as the Internet, the description and concepts equally apply to other public and private computer networks, including systems having architectures dissimilar to that shown in figure 1. For example and without limitation thereto, the system of the present description can find application in public as well as private networks, such as a closed university social system, or the private network of a company.

The apparatus 50 may be connected to the Internet 30 through a router 40. As is well known in the relevant art(s), routers forward packets between networks. The router 40 forwards information packets between the apparatus 50 and devices 10 and 20 over the Internet 30. A load balancer 70 balances the traffic load across multiple mirrored servers. As is understood by those skilled in the relevant art(s), the web server 90 and the image & document server 100 may be a cluster of each type of server instead of the one shown in figure 1. The firewall 60 provides protection from unauthorized access to the apparatus 50. The switch 80 enables all the devices in the apparatus 50 to communicate internally. The components appearing in the apparatus 50 refer to an exemplary combination of those components that would need to be assembled to create the infrastructure in order to provide the tools and services contemplated by the present description. As will be apparent to one skilled in the relevant art(s), all of components of the apparatus 50 may be connected and may communicate via a wide or local area network (WAN or LAN).

The apparatus 50 may include web server 90. It could also be a cluster of web servers. The web server 90 may also serve as the application layer of the present description. The web server may host applications or functions such as the seller's data exchange interface 91, the negotiation interface 92, the buyer's data exchange interface 93 and the distributor interface 94. Data exchange interfaces 91 & 93 may or may not be identical, and serve the same or different purposes for the users.

Another server may be the document & image server 100. It has the purpose of storing and providing digital images & content to other components of the apparatus 50. Also included could be a communications server stack including an email server 110 and a chat server 120. The communications stack may be responsible for handling the internal and external messaging and communication pertinent to the method and the apparatus 50.

The web server 90 is a system that may respond to Hypertext Transfer Protocol (HTTP) requests from remote clients 10 and 20 (i.e. users of the apparatus 50). The web server 90 may provide the graphical user interface (GUI) to the clients 10 and 20 in the form of web pages. Clients 10 and 20 communicate via other protocols. Protocols suitable for digital communication over communications networks such as the Internet, local area networks or wide area networks.

As will be appreciated by those skilled in the relevant art(s), this configuration of network devices (routers 40, firewalls 60, and switches 80) is flexible and can be extended or omitted in certain embodiments.

As will be appreciated by those skilled in the relevant art(s), the inclusion and configuration of the firewall 60 may ensure that only desired traffic will be allowed into and out of the apparatus 50.

In an embodiment, parts of fields and forms provided by the webserver 90 may be broken out. Such parts broken out may be the seller's data exchange interface 91, or a negotiation interface 92, or a buyer's data exchange interface 93. Or a combination of the seller's data exchange interface 91, the negotiation interface 92, and the buyer's data exchange interface 93. Such parts broken out from the web server 90, may be referred to as a distributor interface 94. A distributor interface 94 may also be referred to as a widget. A distributor interface 94 may have all functionality as when connecting to an apparatus 50. A distributor interface 94 may have parts, or a subset of functionality as when connecting to an apparatus 50. One purpose with a distributor interface 94 may be to integrate it in other apparatuses, such as other web servers, outside the apparatus 50.

A distributor interface 94 may be at least one of:

-a html (hypertext markup language) page, or

-a computer program code, or
-a scripting code for execution by a computer processor, or
-other means for providing a subset interface, part of an larger interface.

The distributor interface 94 may be communicating via the Internet 30 with the apparatus 50. The distributor interface 94 may also be communicating via other communications network adapted for digital communication. The distributor interface may be installed in such a way that it enables communication between clients 10 & 20 without having to communicate with the apparatus.

The distributor interface 94 may be connecting to the webserver 90, by a similar way as a buyer client 10 or a seller client 20. The distributor interface 94 may also directly connect to different servers part of the apparatus 50. Such connection may be established with the image and document server 100, the e-mail server 110, the chat server 120, or the database 130.

A broken out distributor interface 94 may be advantageous for an owner of an apparatus 50, because a distributor interface 94 may enable wider usage of an apparatus 50. It may also be advantageous for a part integrating a distributor interface 94, because the part integrating the distributor interface 94, may be able to reduce costly development and may be able to reach a bigger group of using clients.

Figure 3 shows how computer servers, for example web server 90, image & document server 100, email server 110, chat server 120, and database server 130, as well as the client devices 10 and 20 may include components typical to those of a computer.

A list of components may include, but is not limited to, peripheral devices 400 (input devices 480, storage devices 440, and output device 410) and core components 920 (north bridge 930 and south bridge components 540).

As part of peripheral devices, input devices may include a keyboard 490, a mouse 500, and a scanner 91910; storage devices may include hard disks 450, CR-ROMs 460, and Floppy drives 470; and output devices may include monitors 420 and printers 430.

As part of the core components of a computer, the south bridge components may include a host of bridges that generally handle peripheral device support, and the north bridge handle the functions vital to the computer.

The south bridge components may include, but are not limited to, the EISA bus bridge 610,the USB bridge 620, the PCI bridge 630, the ATA bridge 640, the LAN Network bridge 650, and SCSI bridge 660. Each of the bridges has a bus to accommodate attaching of one or more peripheral devices. The local bus 670 may act as a gateway between the south and the north bridges. The BUS 600, manage external connection to the south bridge.

The north bridge components may include, but are not limited to, the (CPU) central processing unit 570 and its hi-speed (SRAM) cache 580, the (DRAM) main memory 560, the (GPU) graphics-processing unit 550 and its video RAM 540.

Computers and servers may be generally controlled and coordinated by an operating system software. The operating system controls allocation of system resources and performs tasks such as, but not limited to, processing, scheduling, memory management, networking, and I/O services. Thus, the operating system resident in system memory and executed by CPU coordinates the operation of the other elements of the apparatus 50.

Although the description of the computer servers in the apparatus 50 may refer to terms commonly used in describing particular computer servers, the description and concepts equally apply to other processing systems, including systems having architectures dissimilar to that shown in figure 1 such as embedded systems.

The apparatus 50 may also include the image & document server 100 or a plurality of image servers that manage(s) digital content as images, documents, and humanly viewable and readable material. The image & document server 100 may be configured separately from the web server 90 to increase scalability. The digital content may be in any of a wide variety of acceptable file formats, including, but not limited to, text, audio, video, graphics and other common media formats.

The communications server stack, email server 110, and chat server 120, is a repository for electronic messages received from the Internet 30. It also manages the

transmission of electronic messages ("electronic mail", “posts”, “chat” or "e-mail"). Each of the servers in the communications server stack may consist of a storage area, a set of user definable rules, a list of users and a series of communication modules. A primary purpose for the communications server stack may be storage and distribution of electronic messages to the Internet 30, and transmission of electronic messages between users devices, clients 10 and 20.

As can be appreciated by those skilled in the relevant art(s), the database server 130 may well be represented by either a cluster, or a load balanced and cluster of database servers.

Method

Figure 2 shows a method for negotiation and trade with digital content through the use of the apparatus 50. The method is one embodiment of the description, although other methods or variations of the described method may be within the scope of the description.

The method may include elements shown in Figure 2, divided into relevant groups. The first group is henceforth referred to as core functions 200; the second group of functions as supporting functions 260; and complementary functions 300.

Apparatus 50 is accessed by clients 10 and 20, and presented to the user as a GUI. The objective for the users accessing the method and the apparatus is to agree on a sale and achieve a delivery of digital content.

The method may be initiated by a buyer 250 posting a request for digital content in the buyer’s data exchange interface 93 accessed through the client 20.

The method may also be initiated by a seller 210, posting a description of a digital content that is for sale, using the seller’s data exchange interface 91, accessed through the client 10.

The method may also be initiated by a buyer, responding to an existing seller in the apparatus, using the negotiation interface 92 or other part of the apparatus. Other methods of initiating the method may exist.

A user initiating the method may upload digital content, and terms in conjunction with the digital content. Examples of terms may be: specification, price, and other conditions defining the negotiation and the digital content such as: user credentials, requirements on anonymity, time validity, preview options, and more.

One or more users having access to the method and the apparatus 50 initiate the method. Access to the method and the apparatus 50 may be made by secure means through the Internet 30. The users that are part of the method and apparatus 50 may be recognized and authorized by a separate secure authorization process such as unique login ID, passwords, control questions, as hardware solutions. Industry standards for secure electronic communication in public networks may be used.

All data including necessary credentials, for example e-mail, or user identity and password, for managing secure authorization and access may be stored in a database 130, not accessible by unauthorized parties.

The mutual benefit of the buyer 250 and seller 210 using this method is the ability to achieve a fair price for the digital content. Additionally, the method facilitates the possibility for the buyer 250 and seller 210 to establish a trust that may, ultimately lead to a trade of the digital content.

At any time before the negotiating parties have reached an agreement, either party may have the ability to terminate the negotiation as a result of the inability to reach an agreement. If so, the process is interrupted and any subsequent steps may then be ignored. If a negotiation is terminated, another negotiation may be initiated between the parties. The new negotiation may, however, be separate from, and have no relation to that of the terminated one.

A negotiation may be complete when two parties have reached an agreement of the terms and price of the digital content and accepted the terms of the agreement.

A negotiation reaching agreement may result in delivery of digital content, payment, and evaluation of the trade.

Core functions 200

Core functions of a negotiation may consist of terms 220, digital content 230, and preview. Terms may include specification, price, and other conditions defining the trade of digital content. During any part of the negotiation, any of the negotiation parties 210 & 250 is able to alter the terms. The original terms may be available for later comparison. The benefit of the method is that users are able to match terms and digital content, necessary to meet both party's expectations.

Figure 5 shows a flowchart of how terms modification may occur.

In step S700 the party modifying the specifications may use the tools provided in the negotiation interface to make the desired alterations to the existing specifications in step S710 of the negotiation.

Upon submitting modified specifications in step S720 and S730, the modified specification together with related information about the user and negotiation may be sent to the web server 90 from the client 10 or 20 via a secure connection through the Internet 30.

When the web server 90 receives the request for modifying the specifications, the user may be authenticated to ensure that the user is a negotiating party and that the user's proposed modifications to the specification are allowed in step S750.

If the user and the proposed modifications of the specifications do not pass a validity check, the user may be reported and an investigation may be initiated to learn whether the user maliciously tried to make non authorized alterations to negotiation specifications. In addition, if the validation should not pass, the user may be alerted in step S740 that the modified specification contained errors and may require further alterations before being resubmitted.

If the validation should pass, however, in step S760 the new specification may be stored in database server 130 and the old specification may or may not be stored for later

history references. In addition to storing the new specifications, the database server 130 may also store other relevant pieces of information of the specification modification. Such pieces of information may include, but are not limited to, a detailed timestamp of the modification of the specifications, a revision identifier, and the IP address of the source of the modification proposal.

After the new specifications have been stored in the database server 130, in step S770 the apparatus 50 may notify the involved parties that the specification for the negotiation has changed S770. Such notification may be done via e-mail, web, instant messaging, short message service (SMS), and similar. The new specifications of the negotiation may automatically be updated in the negotiation interface 92 to ensure that the negotiating parties are at all times considering the newest version of the specifications.

The process may be repeated. The process may be repeated until an agreement is met. The process may be also repeated until one party terminate.

Trading with digital content, which characteristics are unknown, or unverified by the seller is difficult. Not only do you need to be able to change the price. Other conditions might need to be changed during a negotiation too. This may be influenced by the components in the methods and apparatus. Thus it is important to be able to repeat the process. By the mutual possibility to change the terms you are able to maintain a relation with the counterpart. This is a benefit of the method.

Content may be submitted in step S800 by the seller 210 via an interface, data exchange interface 91 through the Internet 30 to the apparatus 50. The act of submitting digital content may be initiated by the user, or by other means such as automatic retrieval or third party solutions. The digital content may be submitted by file upload or by any other tools provided by the apparatus 50. Examples of other tools may be: file upload via a web interface, file transfer via ftp-protocol, e-mail, physical delivery of an electronic digital memory.

The digital content may contain information intended for sale. The digital content may be in any of a wide variety of acceptable file formats, including, but not limited to, text, audio, video, graphics, and other common media formats. Methods of submitting the digital content may include, but are not limited to, uploading the digital content through a

file upload tool in negotiation interface, entering content as text in a text input tool also provided in the negotiation interface 92.

Upon submission in step S800, the digital content may be sent to the web server 90 from the client 10 via a secure connection through the Internet 30. When the web server 90 receives the digital content, it may store the digital content securely on the image & document server 100 where it may not be accessible through the Internet 30. This is seen in step S810 and S820.

The web server 90 may determine if the submitted digital content is suitable for creating previews in step S830, which is the case if the digital content is of a supported file format that may later be used to create a preview of the digital content.

If the digital content is possible to use for later preview creation, the web server 90 may proceed to prepare the content for later preview creation. This may include, but is not limited to, content that is of a file type that contains humanly readable content, i.e. text, graphics or video. If the digital content is a document of such sort, the web server 90 may convert the source document into an intermediate file format that is beneficial for preview creation 840. The web server 90 may then determine how many pages the converted document contains S850. If the converted document contains more than ten pages for example, the web server 90 may choose to select the five first and five last pages of the converted documents for extraction S870. Also the first two and last four pages may be selected.

If the converted document contains ten pages or less, all the pages may be extracted in the same way S860. The web server 90 may extract the selected pages from the converted document as high-resolution images of the pages containing the digital content S880. The high-resolution images may be stored on the image & document server 100 and may not be accessible via the Internet 30. Entries may be made to the database server 130 to record that digital content. Entries may be stored in the database server 130 representing that new high-resolution preview images have been prepared.

If the previews have been successfully prepared the apparatus may notify the negotiating parties that digital content has been submitted and added to the negotiation.

Appropriate areas of the negotiation interface 92 may automatically be updated to reflect the fact that content has been submitted to the negotiation.

Provided that the submitted digital content has successfully been prepared for preview creation, or if the digital content was not suitable for preview creation and the user provided a preview him or herself in the form of one or more high resolution images, preview creation 240 may be commenced.

The benefit of the process is that it allows the user to submit digital content in familiar and available to the user. The apparatus 50 makes necessary conversion. This greatly facilitates for the user.

The preview creation in step S1000 may be made through use of a tool in step S1020 that is run on the client computer 10. Copies of previously prepared high-resolution preview source image files may be transferred S1010 to the client-side preview manipulation tool 1020 through the Internet 30 via a secure connection.

The seller 210 may then use filters to manipulate the previews in step 1030 that may be provided by the manipulation tool shown in figure 11, 12,13.

Figure 11 shows an example of how the seller may cover part of the preview image with an opaque colour field to hide relevant information. There may be a slider that allows the seller 210 to choose how much of the preview to be covered. There may also be options provided for the seller 210 to choose whether the left or right part of the preview should be covered as well as with what colour and opacity.

Figure 12 illustrates an example of how the seller 210 may be able to put vertical or horizontal stripes over the preview image to cover either columns (may be useful for spreadsheet type document preview modification) and rows (may be useful when covering whole paragraphs of text). The thickness, colour and opacity of the stripes may be chosen by the seller to achieve a desirable preview.

Figure 13 shows an example of how the seller 210 may be able to use a pen tool to manually cover areas of the preview. The pen may draw fields of the colour and opacity desirable to the seller 210.

The list of filters shown in Figure 11,12, 13 are neither conclusive nor final. Additional filters may be added and existing may be removed. Or existing filters may be changed.

The filters may be applied to a layer that appears in front of the source preview image. The benefit of using this approach may be that the created preview filters may be altered and modified until the previews are saved and with that the preview images are rendered as a raster image.

When the seller 210 is satisfied with the filters on the preview images, he or she may be able to hit a save button 1080. The previous action may ask the seller 210 if the preview images are to the seller's 210 satisfaction, determined in S1040 ready to be saved. If the seller 210 does not approve, he or she may be able to choose to either start over, or continue with the manipulation process. If the seller 210 approves of the created preview images, he or she may be presented with an option to save the images.

Upon approval and submission of the manipulated preview images S1050, the new previews may be saved on the image & document server 100 in a place accessible over the Internet 30 in order for the previews to be made available for review in the negotiation interface 92.

Appropriate entries to the database 130 may be made in step S1060 to reflect that there have been previews either added or updated to the negotiation.

Lastly, the negotiating parties may be notified via the Internet 30 that the preview has been added or updated in the negotiation interface 92. Such a notification may be performed via instant communication, e-mail, SMS, web GUI update and other means adapted for notifications. Appropriate areas of the negotiation interface may automatically be updated to reflect the changes in the preview status of the negotiation.

There are many benefits with the current invention of preview creation. It allows the user to freely chose content to modify and hide, which is beneficiary in trading. It allows the user to repeat the process, as a result of the ongoing negotiation, thus supporting the terms modification process S700. It separates original files from previews made available to other users, ensuring security.

Furthermore it allows for a modification process adjustable to the format of the original digital content. Thus increasing the user experience.

Supporting functions 260

The supporting functions 260 may include, but are not limited to, instant communication 270, a counterpart profile summary 280, and negotiation competition 290. The primary purpose of the supporting functions is to provide tools that will aid the seller 210 and the buyer 250 in reaching an agreement in the negotiation.

Instant communication 270 in the form of a live chat may be provided by the negotiation interface. Examples of communication may be via audio, text, graphics, or video. In addition to aiding the users in building trust, Instant communication 270 may also serve the purpose of assisting the parties to reach an agreement of the terms and price of the traded digital content. The instant communication 270 may be handled by the chat server 120. The negotiating parties may, however, use the negotiation interface as means to conduct the instant communication 270.

A benefit of the instant communication is that it works as a preventer of fraudulent behaviour, requiring the counterpart to respond to an enquiry.

The user may be presented with a chat log in the negotiation interface common to all negotiating parties. In the chat log, each party's chat messages may appear in chronological order. Underneath, or otherwise in close proximity to the chat log, a text input field will allow negotiating parties to post chat messages.

The negotiating parties may write anything in the chat input field and submit the message. The chat message will be transmitted through a secure connection via the Internet to the web server 90 which may store the message and related relevant information about the message in the database 130. Such related information may include, but is not limited to, a reference to which negotiation the message pertains to, a reference to the sender, the message body, and a detailed timestamp of when the message was posted. The message with relevant parameters may then be forwarded by the web server 90 to the chat server 120 in order for the other negotiating parties to be notified of the new chat message. The chat log on all negotiating parties' negotiation interfaces may be updated to

reflect the fact that someone posted a new chat message. Chat messages are stored in the database server 130. Chat logs are stored in the database server 130.

The benefit of chat instead of emails is that it reduces lead time and promotes an informal behaviour important when building trust between two parties. By saving chat logs parties are able to return to earlier dialogues, which form part of the over all evaluation of the counterpart. This becomes especially important when having more than one counterpart.

A user may be able to view a profile summary (counterpart profile 280) of another party, which is also a part of the negotiation in the negotiation interface. A counterpart profile summary 280 may consist of descriptive data, but not limited to, such as a profile picture, user name, professional network, trading statistics, a summarized user rating, and user verification by other entities.

The profile information may be retrieved from and aggregated by the database 130. The counterpart profile summary 280 may help in building the trust between the negotiating parties by providing the ability to review other party's credibility and negotiation history.

The benefit may be that it allows the user to evaluate the credibility and trustworthiness of the counterpart, which may affect the price and the likelihood of a trade.

A benefit with counterpart profile summary 280 is that the users themselves may not themselves be able to in a malicious way try to portray themselves as being more credible than they are. The operator of the apparatus 50 may decide to add objective data into the summary 280. The summary 280 may show actual data on the users' ratings, the users' verification status with external entities and so on. The summary may not in any way be editable and or modifiable by the users themselves.

The profile summary may be complemented by information from external or internal sources (apparatus 50) on measures of credibility, trustworthiness, business ratings and more. This type of information may be generated by the system, and used internally in the apparatus, and exported externally for a business purpose.

The profile summary or the parts of the profile summary 280 may influence the user's ability and rights to use the apparatus 280, and the parts of the apparatus 280.

The negotiation may include the ability for more than only two parties to negotiate for the digital content up for trade. This may allow for negotiation competition 290 to take place. Negotiation competition may present alternative negotiation processes relating to the original terms of agreement and price of the digital content.

The benefit of allowing negotiation competition may be that it will allow the buyer 250 to expect fair pricing while giving the seller 210 more trading opportunities.

Other parties may join the negotiation because they are interested in buying or selling the digital content up for trade. They may do in different ways. The user may find the negotiation while using the apparatus 50 and join the negotiation. The apparatus may also try to find those users who may be interested in either buying or selling the digital content up for trade. The apparatus 50 may do this by matching users' profiles and areas of interest or expertise against the negotiation specification.

When two parties in the negotiation are satisfied with the terms, they may mark that they are ready for negotiation completion by accepting the terms in the negotiation interface 92. When any of the parties accept the terms of agreement, the interface may indicate to the other party that the terms have been accepted and may present the ability to complete the negotiation. If any of the parties alter the terms of agreement or the price of the digital content after the previous terms or price has been accepted by one negotiating party, all marks for acceptance of terms and price may be reset.

If, however, both parties accept the terms of agreement, the negotiation interface may be closed down for further negotiation. At this point, a new set of functions may take over. The post-agreement functions may include, but are not limited to, payment 310, delivery of the digital content up for trade 320, user's evaluation of the other negotiating party 330.

Post agreement functions 300

A payment may be initiated by a buyer 250. The payment process may be finished when the apparatus receives a receipt of completed payment from a payment part-

ner. A payment partner may be an entity providing payment solutions. Payment may be handled by the apparatus 50 without external partners

Upon completion of a payment, the digital content may be made available to the buyer 250 indefinitely or for a predefined period of time.

The buyer 250 may receive a URL where he or she may download the purchased digital content. The URL is only usable to the buyer 250 who may be authenticated at the time of download.

When the buyer 250 accesses the download URL, the image & document server 100 may make the securely stored original digital content available to the buyer and only the buyer at the time of download. The download may then proceed and the digital content may be transferred from the image & document server 100 to the buyer 250 via the web server 90 and the Internet 30 through a secure connection.

After the negotiation is completed, the buyer has paid and retrieved the digital content up for trade, each party may be asked to evaluate their counterpart.

The evaluation may consist of each of the parties rating of multiple fields in the negotiation, including, but not limited to, the quality of the content, the quality of the communication between the parties, the time elapsed, and the pricing.

Both parties may be presented with a form in the negotiation interface 92 where they may input the rating as desired. The form and its data may then be transmitted to the web server 90 where the form data may be validated. The validation may contain, but is not limited to, checking if the user is a part of the deal he or she is attempting to evaluate, checking that the negotiation that the user is trying to evaluate is ready for evaluation, and checking that the user has not already evaluated the negotiation.

If the form data passes validation it may be stored in the database 130 and the involved parties may be notified of the user completed the negotiation evaluation. The result of the evaluations may be added to the users' profile and may be available in future negotiations. The evaluation may affect the users' negotiation history statistics and averages.

If the form data does not pass validation, however, the user may be notified of the error and how to correct it. If the apparatus 50 finds that there is reason to believe that the user is trying to maliciously meddle with the evaluation process, the incident may be reported to management. Management may then investigate the incident and take action on the findings of the investigation.

After a payment, a buyer 250 and a seller 210 may chose to establish a lasting connection in the apparatus 50, represented by a database entry linking user identifications to each other. Each user may develop a network 340 of other users. By network is meant one or more lasting connections between users, in the apparatus 50.

A network, and a lasting connection may be initiated without prior negotiation or trade.

The benefit of keeping core functions 200, supporting functions 260, and post agreement functions aligned in the apparatus 50 is significant. It allows a user to initiate, develop, and maintain a process of sourcing of digital content.

Fig. 14 shows an application for determining relevance of web queries to personal profiles.

This application is a tool that matches an object 1100 (a set of data, such as a question), to personal profiles 1110. It allows a user to make automatic and qualified comparisons against large sets of data using an algorithm including but not limited to keywords, categorization, proprietary trade pattern data and user behaviour. The application is fully functional in both directions and can be reversed to match a personal profile 1110 to other objects 1100.

The application has three core functions.

1: Creating and maintaining a database 1120 of terms such as words, names and phrases and categories such as cities, industries and companies.

2: Extracting useful terms from objects while removing common (and thus counterproductive) terms 1130.

3: Applying an algorithm 1150 to compare the extracted terms 1140 from the object 1100 to the extracted terms 1140 from a set of personal profiles 1110 and measure the relevance.

The terms database

In order to give qualified results the application's algorithm 1150 uses open data sources on Internet through automated application programming interfaces 1160 (API), as well as data from user profiles 1110, to create a database 1120 of useful matching terms and their synonyms and related terms. The terms in this database 1120 are also categorized into groups such as, but not limited to, industries, countries and cities, and can be assigned individual value based on their strength as a search term. The application contains rules to automatically find and remove common words from the database 1120 as common words are less useful when determining the relevance between objects 1100 or profiles 1110.

Using this database 1120 allows the application to reach an accuracy that a simple word-search can never match.

Extracting terms from objects

When processing an object 1100 or personal profile 1110 the application uses the above mentioned database 1120 to extract 1130 valuable terms 1140 from the data contained in the object 1100 or personal profile 1110. The extracted terms 1140 are stored on the object 1100 in question and are assigned their corresponding values from the database 1120. The application can further modify this value based on the number of times the term occurs, where it occurs, and user behaviour. This allows the application to mark terms as more or less important for the specific case, such as excluding terms a user has downgraded. This leaves the object with a set of extracted terms 1140 that can be used to determine its relevance compared to other objects.

Applying the algorithm

Once the application has extracted 1130 all relevant terms 1140 from an object 1100 it compares these terms against the personal profiles 1110 (or vice versa when the application is reversed). The relevance is calculated based on how many terms (including synonyms and related terms) the object 1100 and the personal profile 1110 share and the values the terms have in the list of extracted terms 1140 (on both the object 1100 and the personal profile 1110). Once a relevance over a set value is found the application marks this as a match 1170. The algorithm 1150 used allows the application to search simultaneously for anything that contains the relevant terms instead of applying the algorithm one at a time for every possible match, allowing for high speed matching even in extremely large datasets.

CLAIMS

1. An automatic negotiation system (200) configured to handle negotiation related to digital content between users interacting with the system, the system comprising:

a seller interface (91) for at least one seller (210) to access the system (200),

a buyer interface (93) for at least one buyer (250) to access the system (200), wherein

the seller interface (91) is configured to expose a request for the digital content (230), or from a seller receive the digital content (230) and associated terms (220) to the system (200), and

the buyer interface (93) is configured to receive the request for digital content (230), or expose the digital content (230) and the associated terms (220) to the potential buyer (250), wherein

a request for a modified content (230) and/or terms (220) is received via the buyer interface (93) to the system (200) which request causes the system (200) to register the deviation and provide the modification request via the seller interface (91) to the seller (210), and

which enable the seller (210) to input a modified content (230) and/or associated terms (220) in accordance with the buyers requested modified content (230) and/or terms (220) to the system (200) via the seller interface (91),

which causes the system (200) to register the modified content (230) and/or associated terms (220), such that the modified content (230) and/or associated terms (220) fulfil the buyers (250) requested modified content (230) and/or terms (220).

2. The system according to claim 1, wherein

the request for modified digital content (230) and/or terms (220) is repeated until the modified content and/or associated terms fulfil the buyers (250) requested modified digital content (230) and/or terms (220), wherein

the repetition of request or repetition of modification of content and/or terms is initiated via the buyer interface (93) or the seller interface (91).

3. The system according to claim 1 or 2, comprising:

an arrangement for preview creation, wherein

a preview of the digital content (230) is created at reception to the system (200) and exposed to the potential buyer in place of the original digital content (230).

4. The system according to any of claims 1 to 3, wherein:

the preview is manually created on a client computer (10), by retrieval of a tool via the seller interface (91), thus enabling a seller to create the preview before transmission of any digital content (230) or preview to the seller interface (91).The system according to any of claims 1 to 4, wherein:

the preview creation is iterated such that a modified preview is created.

5. The system according to any of claims 1 to 4, wherein:

the preview of the digital content (230) has an intermediate format different than the original format of the digital content (230).

6. The system according to any of claims 1 to 5, wherein:

the system (200) creates profiles of buyers and sellers, and when a relevance is determined above a set value, the profile is matched with the request.

7. The system according to any of claims 1 to 6, wherein:

the system (200) is adapted to interact with a payment unit (310).

8. The system according to any of claims 1 to 7, wherein:

the system (200) is adapted to delivery the digital content (230) via a delivery unit (320).

9. The system according to any of claims 1 to 8, wherein:

the interaction with the seller interface (91) and the buyer interface (93) is performed via at least one of: instant messaging, e-mail, or web.

10. The system according to any of claims 1 to 9, wherein:

a portion of the system (200) is arranged for operation in second domain separated from the system (200), where the portion of the system (200) is provided via a distributor interface (94).

11. A method in an automatic negotiation system (200) handling of negotiation related to digital content between users, the method comprising:

- exposing a request for, or from a seller (210) receiving a digital content (230) and associated terms (220) via a seller interface (91), and

- receiving the request from, or exposing the digital content (230) and the associated terms (220) via a buyer interface (93) for a potential buyer (250), wherein

- requesting a modified content and/or terms is received via the buyer interface (93) to the system (200) causes the system (200) to register the deviation and provide the modification via the seller interface (91) to the seller (210), and

- enabling the seller (210) to input a modified content and/or associated terms in accordance with the buyers requested modified content and/or terms to the system (200) via the seller interface (91),

- registering by the system (200) the modified content and/or associated terms, such that the modified content and/or associated terms fulfil the buyers (250) requested modified content and/or terms.

12. The method according to claim 11, comprising:

- repeating the request for modified digital content (230) and/or terms (220) until the modified content and/or associated terms fulfil the buyers (250) requested modified digital content (230) and/or terms (220), wherein

the repeated request or repeated modification of content and/or terms is initiated via the buyer interface (93) or the seller interface (91).

13. The method according to claim 11 or 12, comprising:

- creating a preview, wherein

creating a preview of the digital content (230) at reception to the system (200) and exposing the preview to the potential buyer in place of the original digital content (230).

14. The method according to any of claims 11 to 13, comprising:

- manually creating the preview on a client computer (10), by

- retrieving of a tool via the seller interface (91), thus enabling a seller to create the preview before transmitting any digital content (230) or preview to the seller interface (91).

15. The method according to any of claims 11 to 14, comprising:

- iterating the preview creation such that a modified preview is created.

16. The method according to any of claims 11 to 15, comprising:

- creating profiles of buyers and sellers, and when a relevance is determined above a set value,

- matching the profile with the request.

17. The method according to any of claims 11 to 16, comprising:

- interacting with a payment unit (310).

18. The method according to any of claims 11 to 17, comprising:

- delivering the digital content (230) via a delivery unit (320).

19. A computer program, comprising computer readable code means, which when run in a automatic negotiation system (200) according to any of the claims 1-10 causes the automatic negotiation system (200) to perform the corresponding method according to any of the claims 11-18.

20. A computer program product, comprising a computer readable medium and a computer program according to claim 19, wherein the computer program is stored on the computer readable medium.

Figure 1– Technology

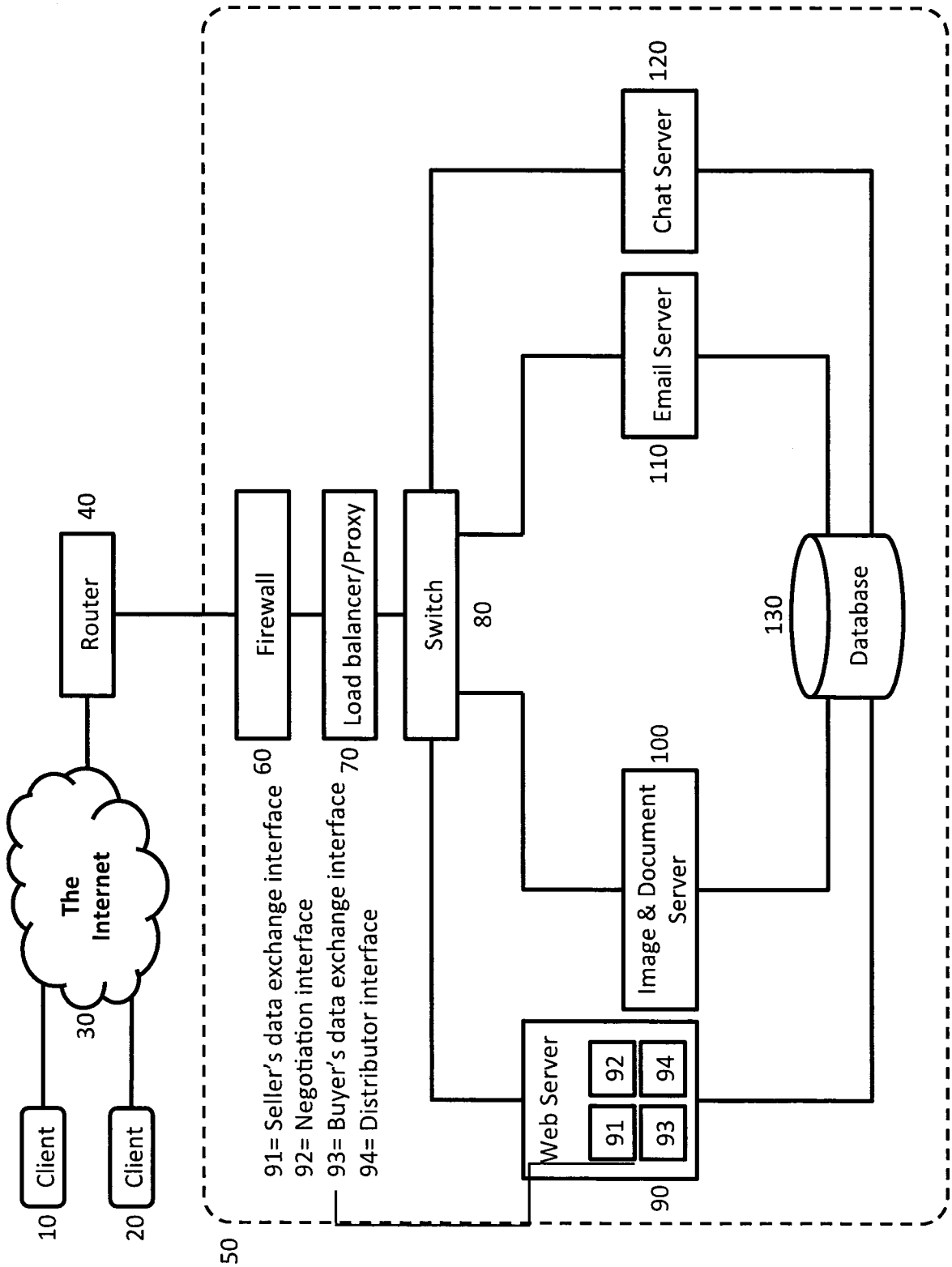


Figure 2 – Method

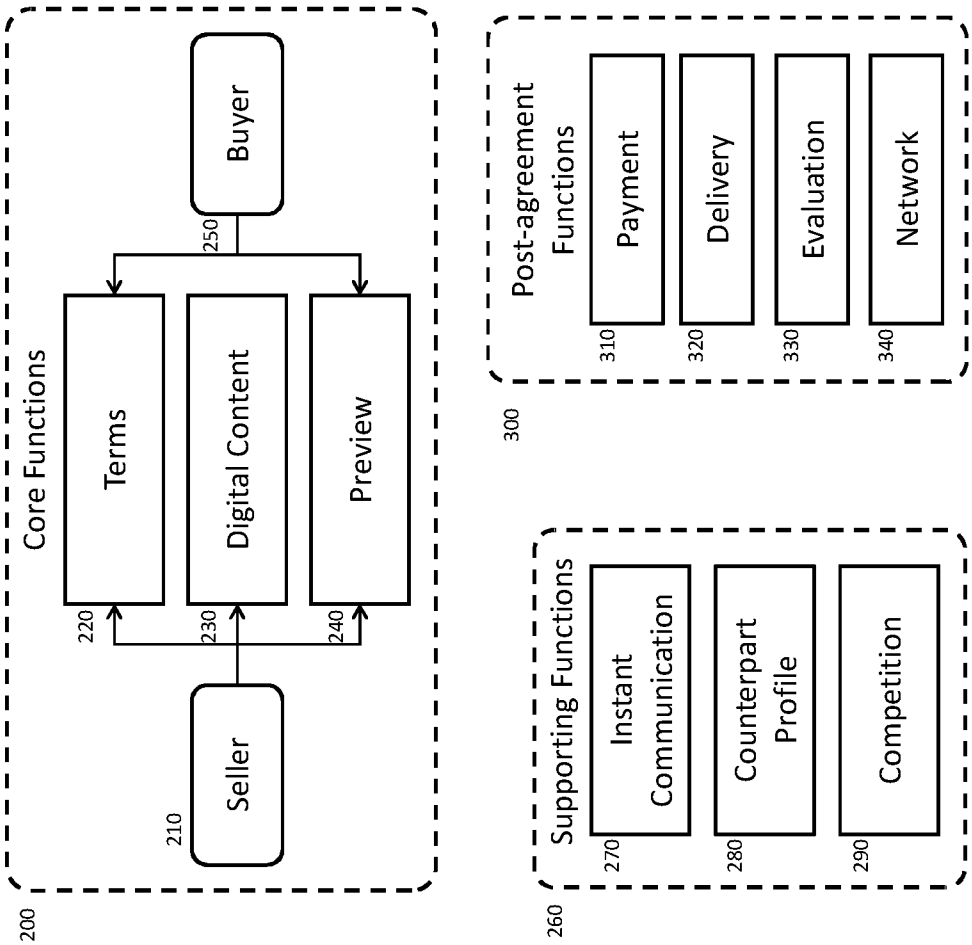


Figure 3 – Computer

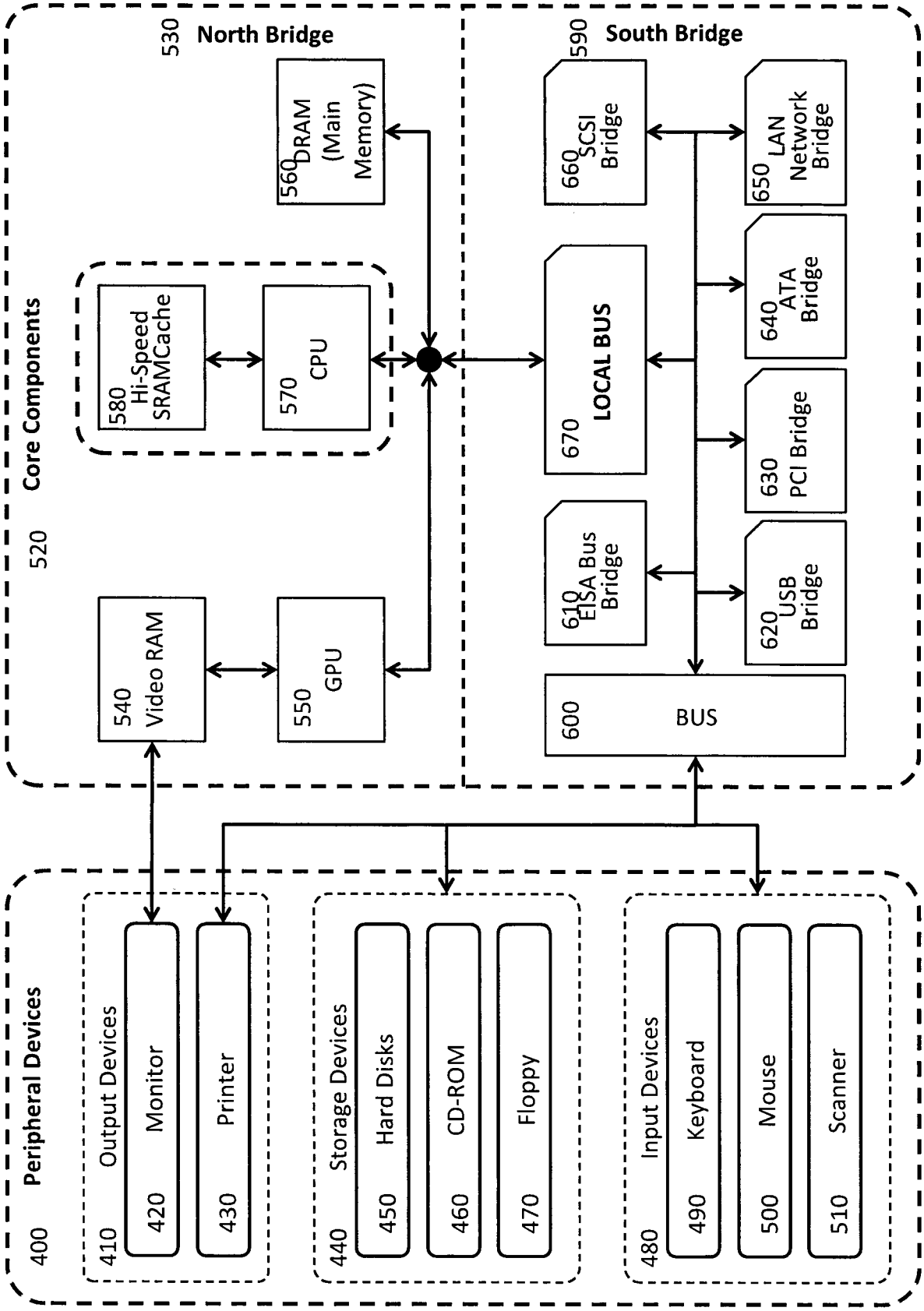


Figure 4 – Distributed solution

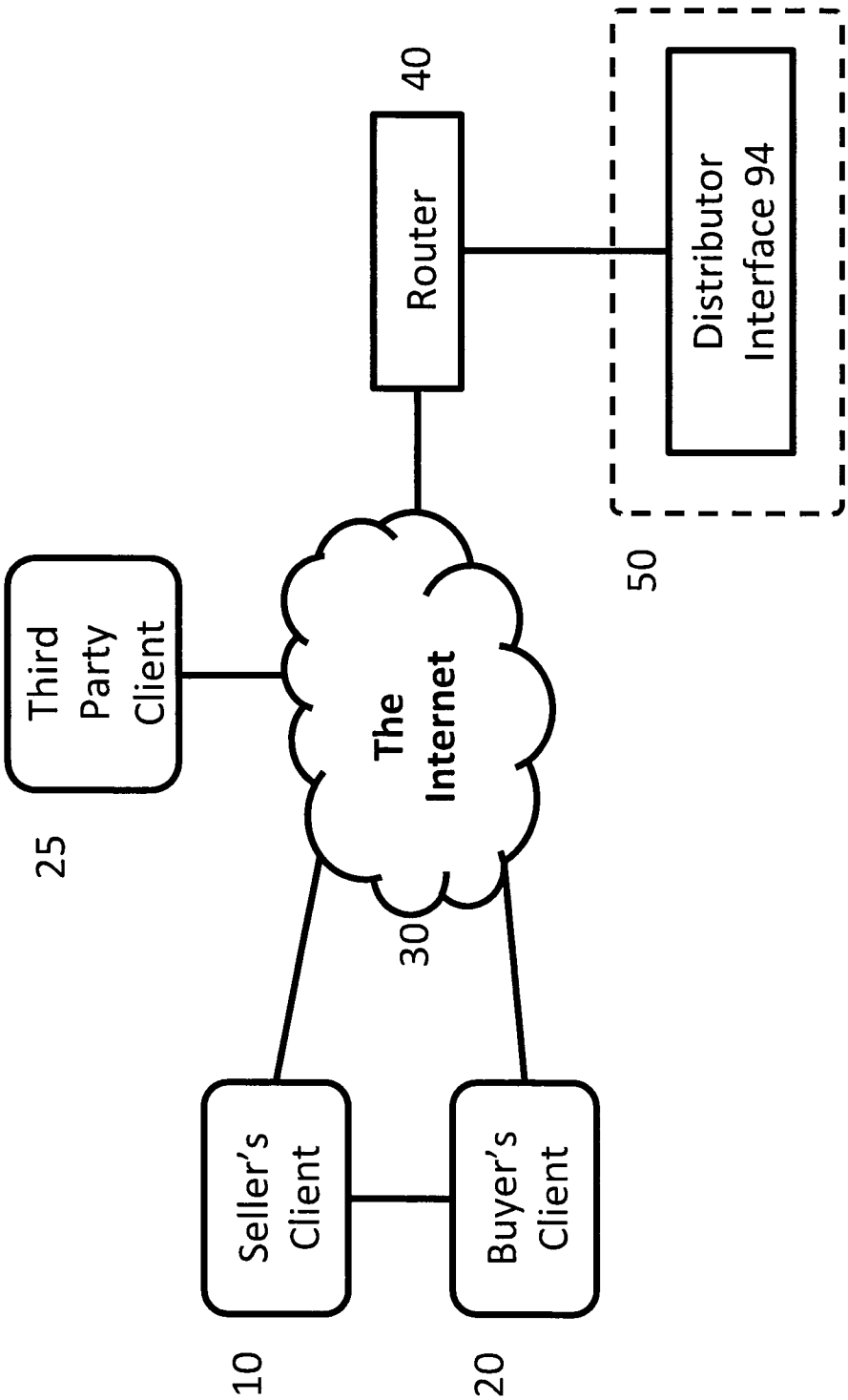


Figure 3 – Computer

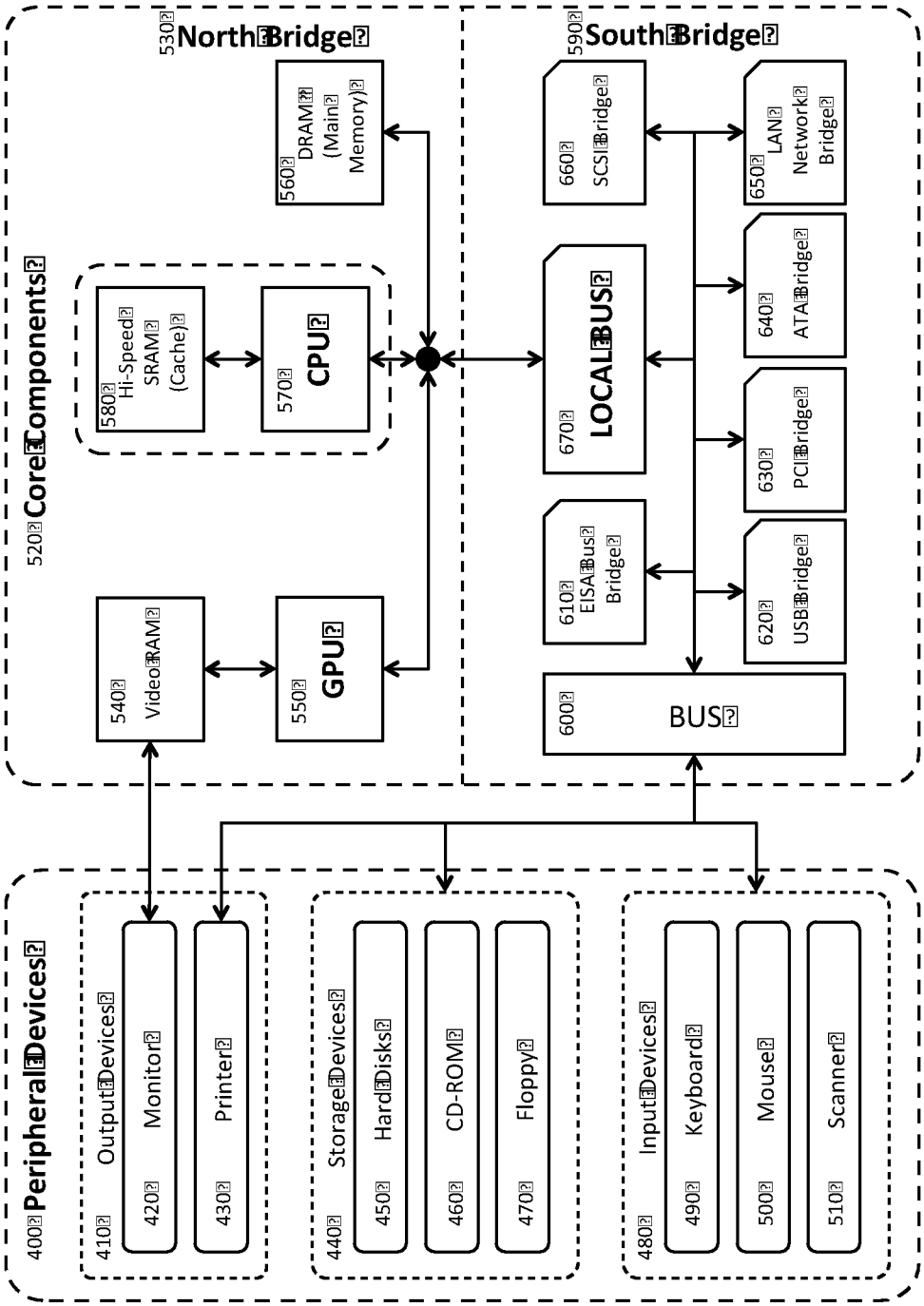


Figure 4 – Distributed solution

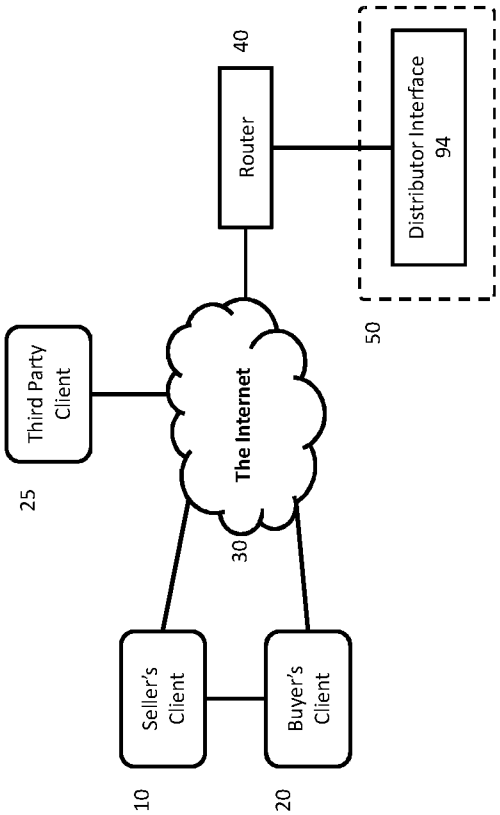


Figure 5 – Flowchart Terms Modification

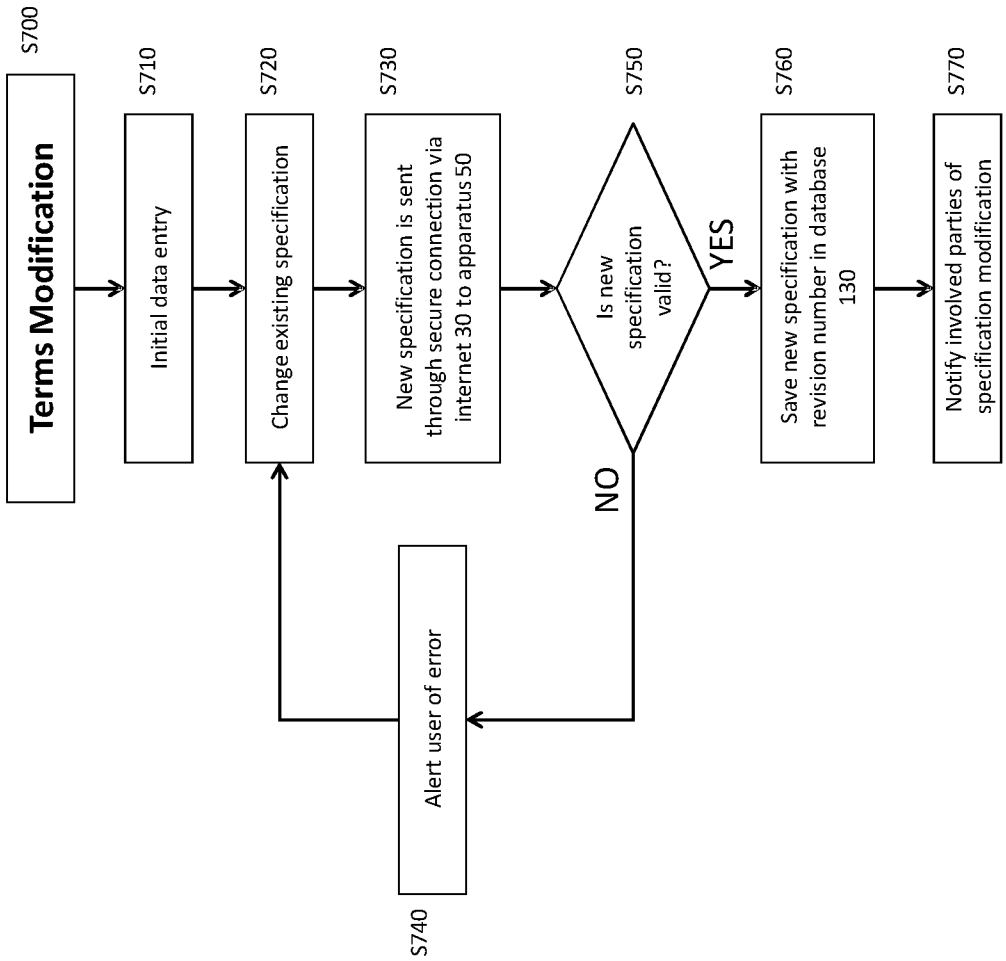


Figure 6 – Flowchart Content Submission

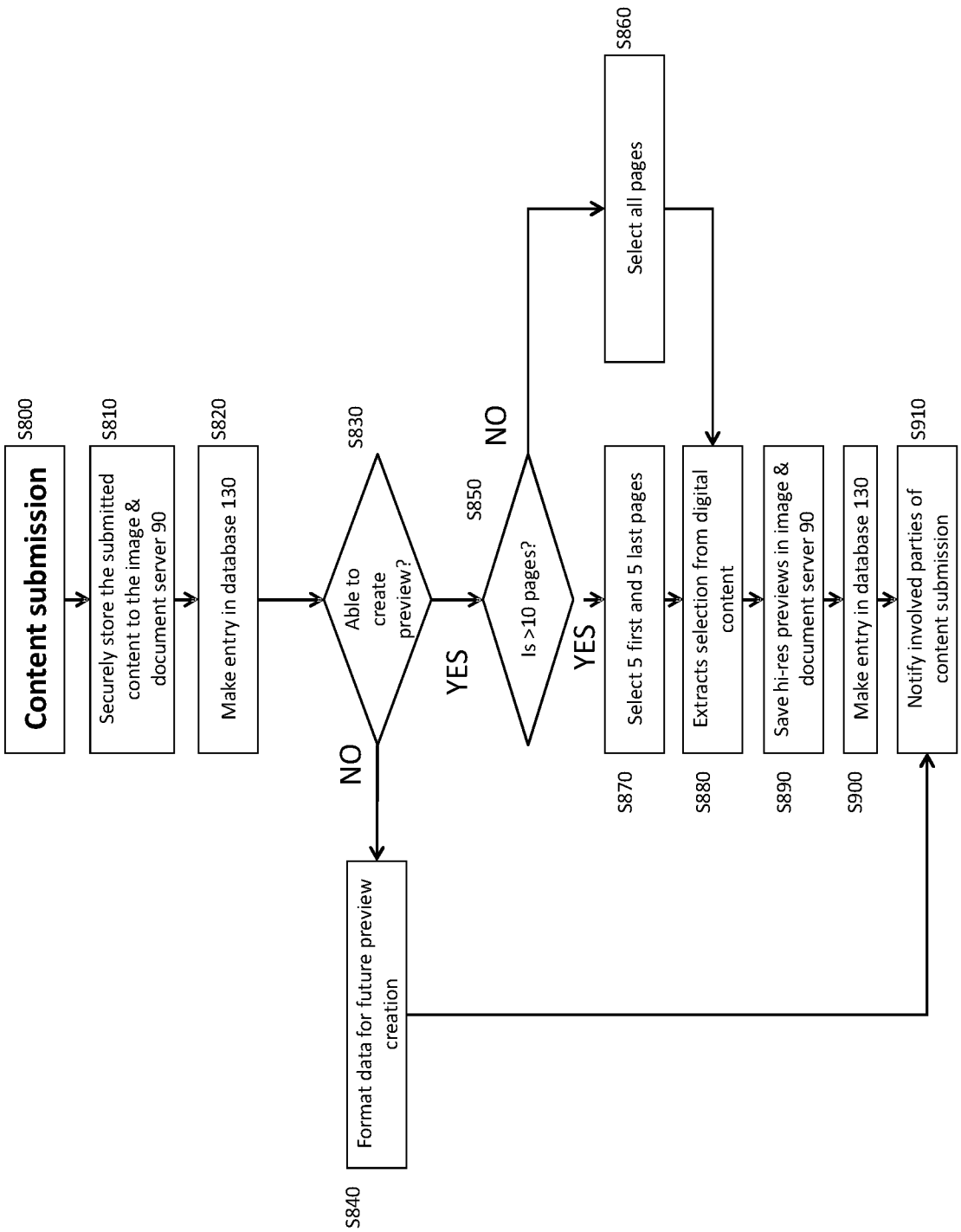


Figure 7 – Flowchart Preview Creation

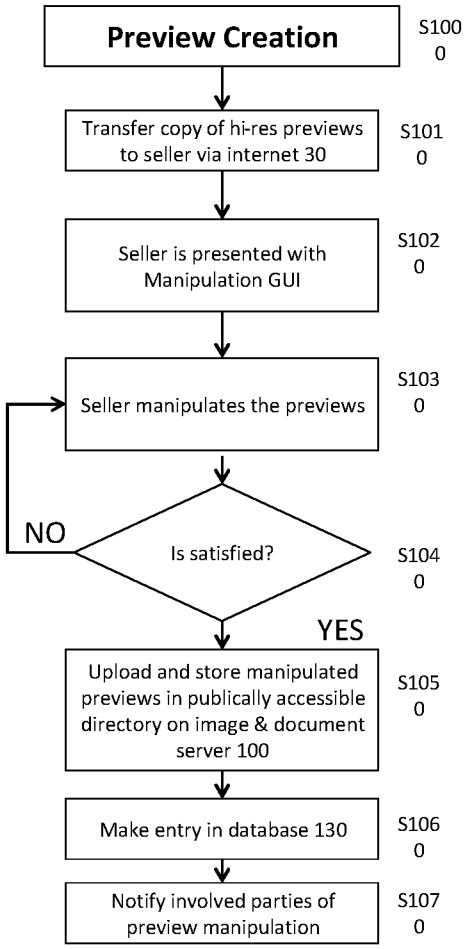


Figure 8 – Example Negotiation Interface

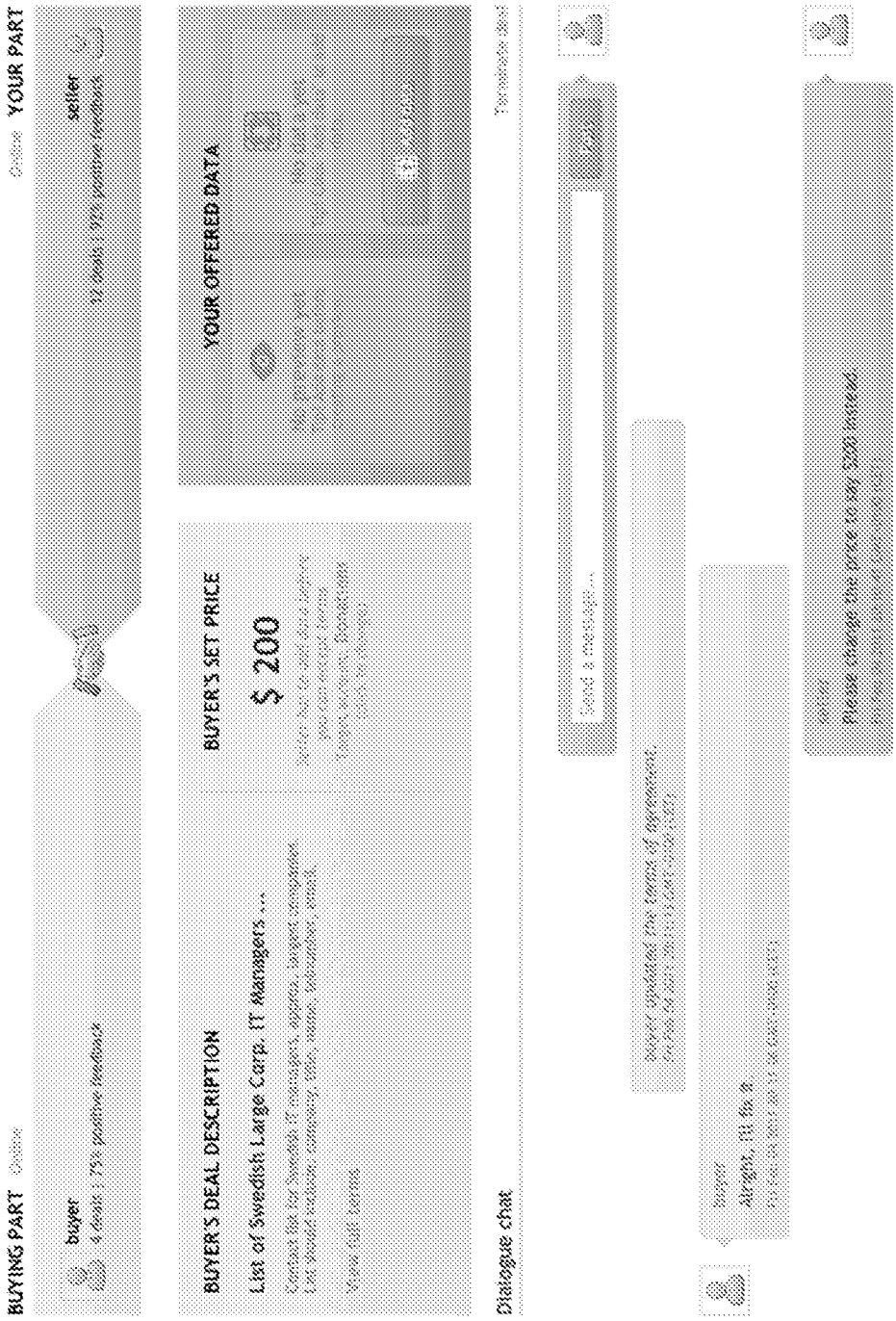


Figure 9 – Example buyer's data exchange interface

Figure 10 – Example seller's data exchange interface

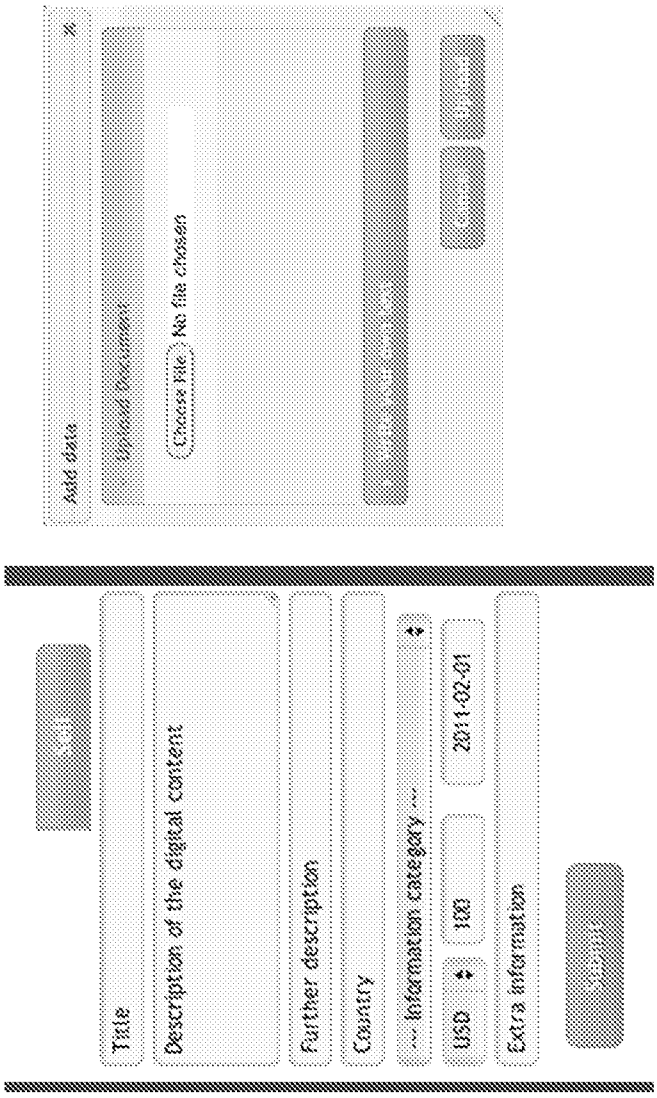


Figure 11 – Example 1 Preview

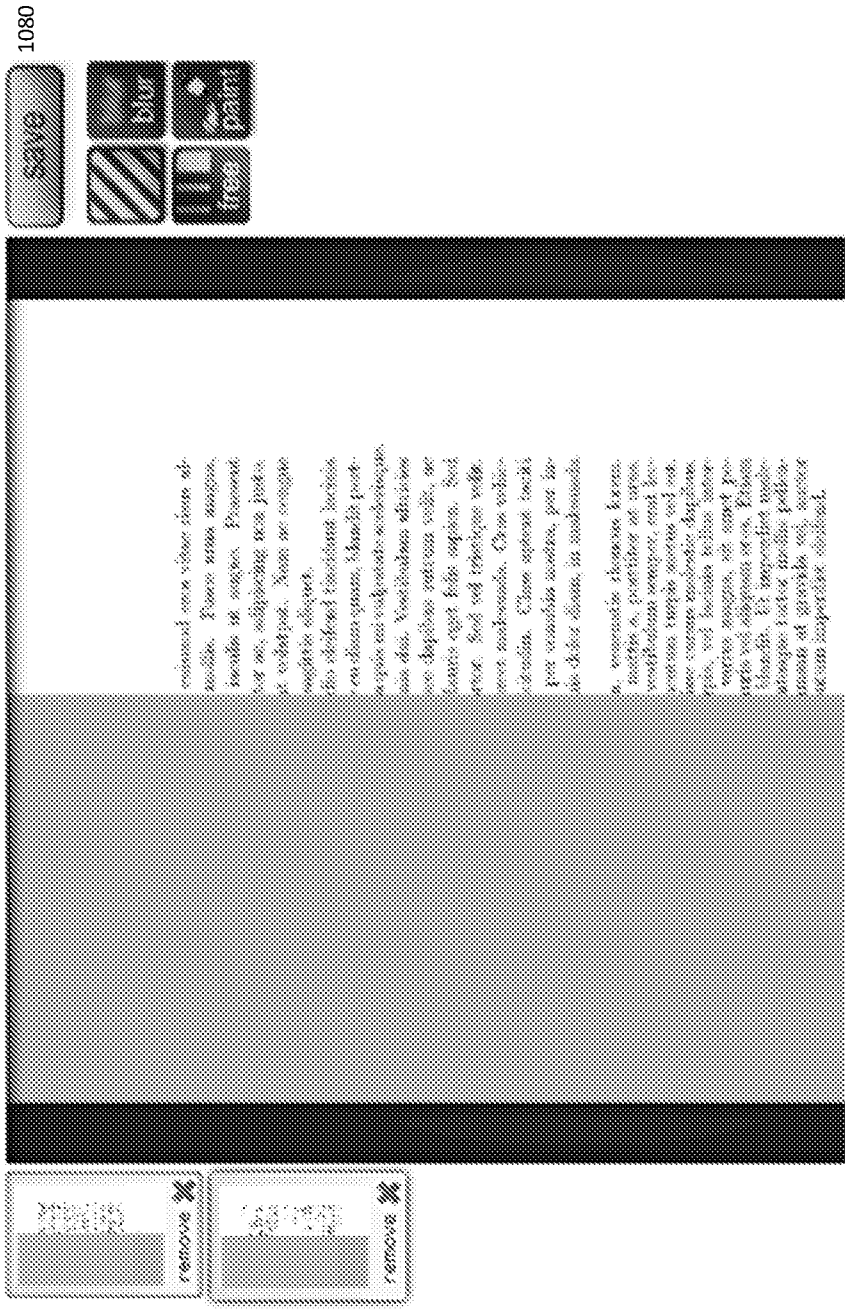


Figure 12 – Example 2 Preview

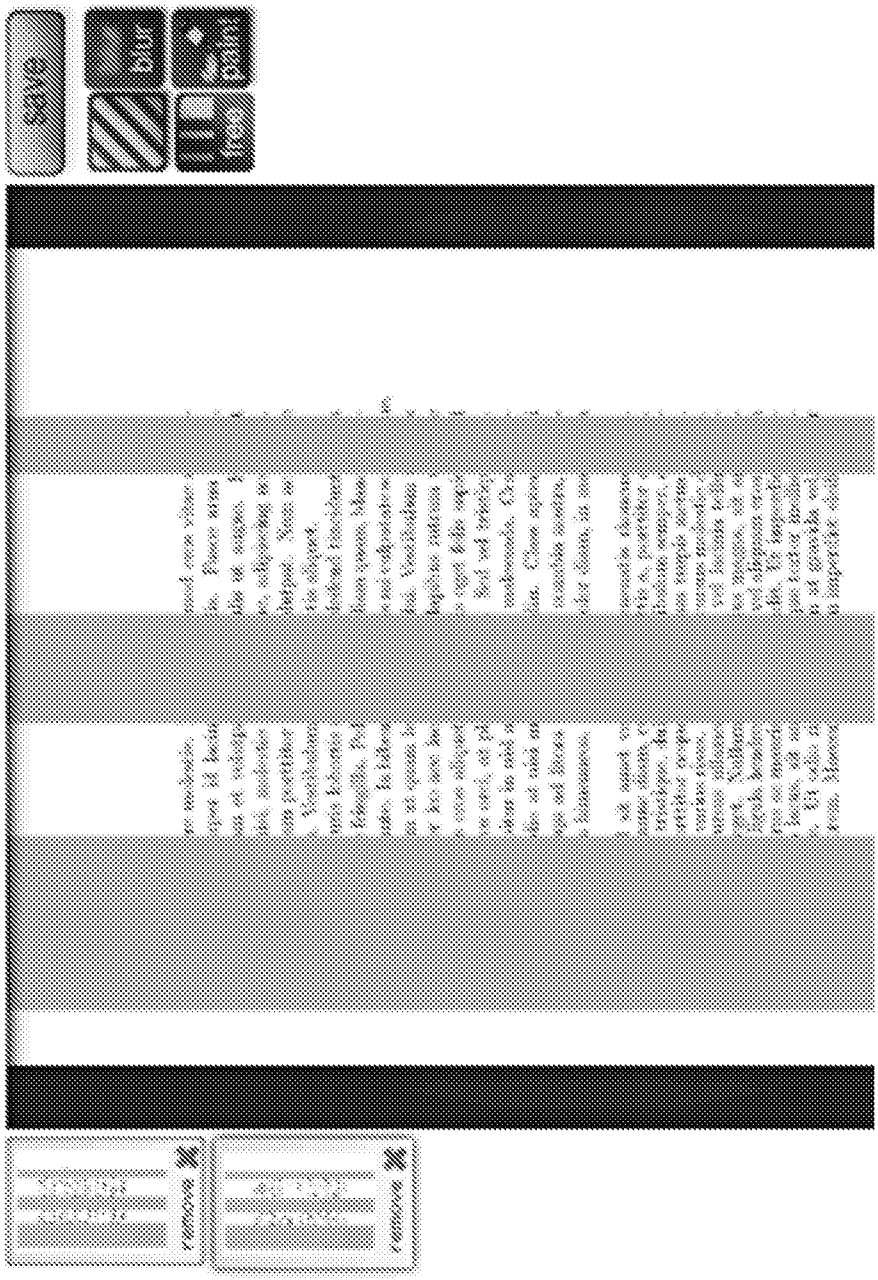


Figure 13 – Example 3 Preview

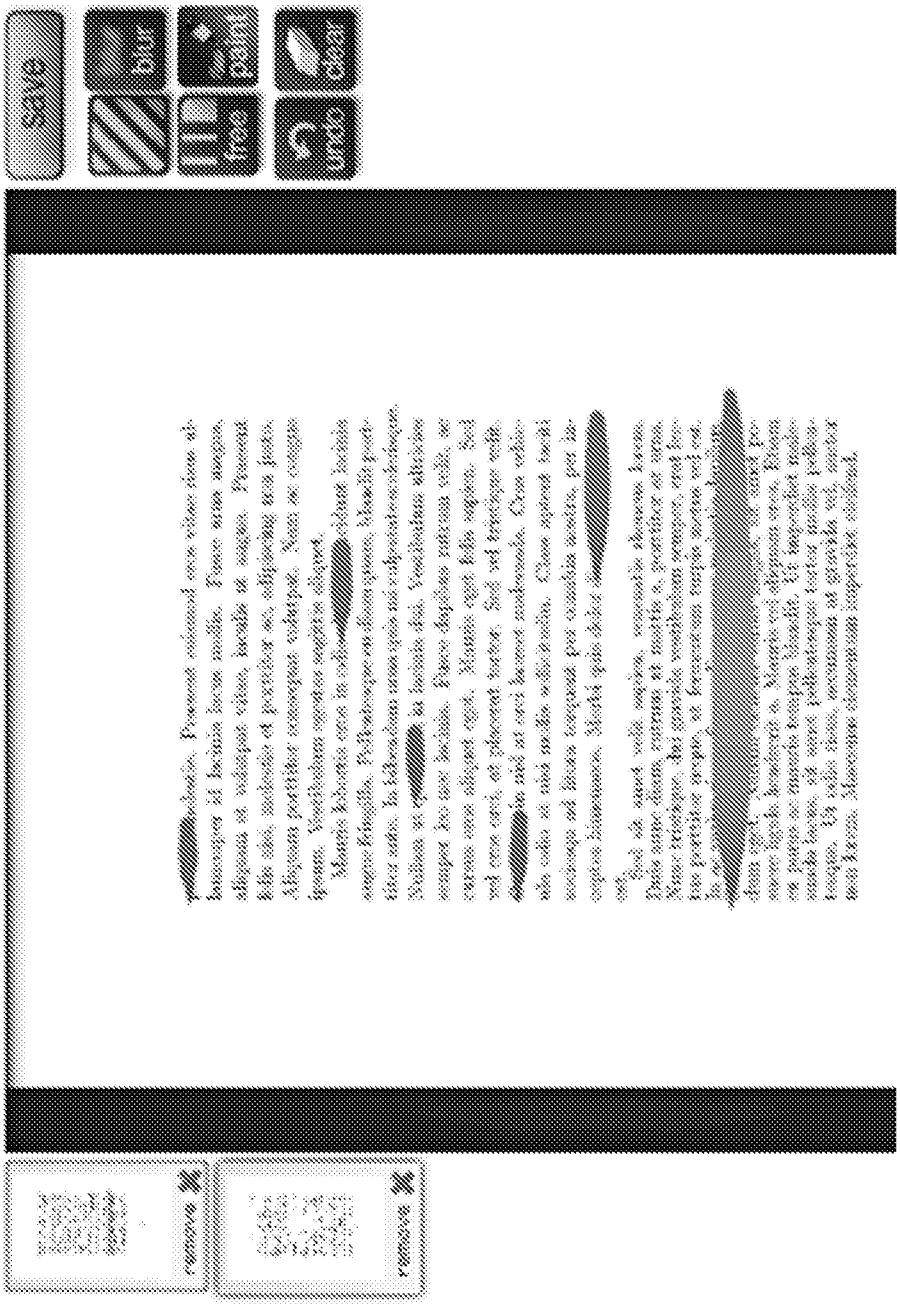
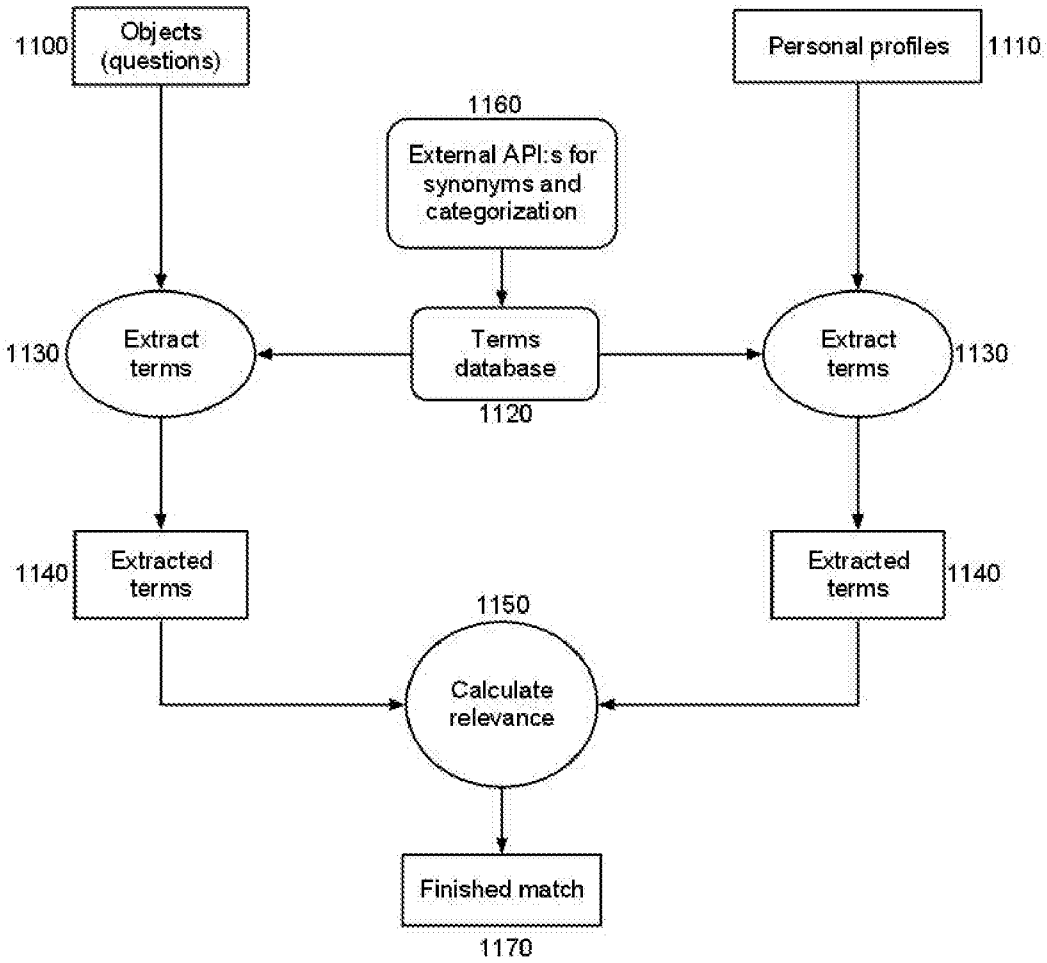


Figure 14 – Block diagram of matching



INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2012/050116

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G06Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, PAJ, WPI data, COMPENDEX, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 20020046157 A1 (SOLOMON NEAL), 18 April 2002 (2002-04-18); abstract; paragraphs [0015], [0031]-[0032], [0206], [0247], [0275], [0290]-[0292]; figure 8; claims 3, 100 --	1-21
A	US 6131087 A (LUKE JAMES O ET AL), 10 October 2000 (2000-10-10); abstract; claims 1-10 --	1-21
A	US 7577582 B1 (OJHA PURNENDU SHEKHAR ET AL), 18 August 2009 (2009-08-18); abstract; column 18, line 115 - line 59 -- --------	1-21

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
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"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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Date of the actual completion of the international search	Date of mailing of the international search report
14-06-2012	15-06-2012
Name and mailing address of the ISA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. + 46 8 666 02 86	Authorized officer Behroz Moradi Telephone No. + 46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 2009)

Continuation of: second sheet

International Patent Classification (IPC)

G06Q 30/06 (2012.01)
G06Q 50/18 (2012.01)

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Cited literature, if any, will be enclosed in paper form.

US	20020046157	A1	18/04/2002	US	20090106165	A1	23/04/2009
US	6131087	A	10/10/2000	NONE			
US	7577582	B1	18/08/2009	NONE			