Atsource Security

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Financial information about individuals and corporations has been one of the most sought-after items in western society for many centuries. The protection of this information has spawned entire industries of protection services and legal systems which in itself generates billions of dollars in revenue each year. In today's environment the tried and proven methods of security have broken down and no longer provide adequate security for the owner of the financial information. The advances of computing coupled with the inherent insecurity of the Internet have opened the doors wide to fraud and identity theft possibilities. It seems that as soon as one new form of security is deployed to solve an issue there are new holes exposed and people all too willing to exploit them. It is into this environment that Atsource brings a solution to preventing one form of Mortgage fraud with no additional cost to the Financial Institution who have the most to gain from the system and the most to lose should they continue with the current antiquated methods.

Atsource provides an automated intermediary for the interaction between the financial institutions, legal workers and the government. Through the use of the latest technologies not only is the mortgage discharge process more secure and less susceptible to fraud, it is also faster and allows all parties to benefit from rapid completion of mortgage discharges. Lending institutions can significantly reduce the initial period of waiting for clear title on a property for which they have just forwarded new mortgage monies.

This document outlines the security issues addressed by the Atsource solution along with the methods and techniques employed to maximize the security of all documents and financial information in the mortgage discharge process.

General Web security

Utilizing a web interface is rapidly becoming one of the most accepted forms of communication. This has gained rapid acceptance due mainly to its general ease of use and the timeliness of the information provided. The major disadvantage to web access is the inherent openness of the data stream between the information provider and the consumer. The second area of weakness is the poor authentication of who the user is or even who the provider is.

Atsource has addressed the first of these concerns through the use of the secure web page. In the secure web page environment, all interactions between the server and the client are encrypted with an algorithm which employs the latest TLS encryption with a 256-bit key. This method is widely used today by ecommerce sites during the entry of credit information. This level of encryption is deemed adequate with current capabilities of computer systems to prevent unwanted interception of the data being exchanged between the two parties. (Today a network of super-computers would take in excess of 20,000

years to break a 256 bit encoded data stream through brute force techniques [1]).
Interactions between the Atsource systems and those of BC OnLine are also protected by
the same 256-bit encoded data stream.

To ensure the highest level of user authentication Atsource has linked their system to the
BC OnLine user identification and authentication subsystem. Currently Legal
Professional users of the Atsource system use their BC OnLine user account and
passwords to gain entry to the Atsource mortgage transactions. These accounts are
managed by BC OnLine and are maintained in a highly secured environment. Atsource
meets the restrictions imposed by BC OnLine on the handling of these user passwords.
Atsource does not store any user passwords in their system and therefore provides no
incentive to outside hackers for breaking into their servers. The second feature available
to Atsource as a consequence of being tied with BC OnLine is user classification. BC
OnLine classifies each user as to their purpose for using the service, i.e. they are a lawyer
or notary etc. This allows Atsource to further restrict the access of the BC OnLine user to
only certain actions in dealing with the mortgage process. Only Lawyers and Notaries can
request discharge information and therefore all other user groups are prevented from
requesting payout information. This eliminates the risk to the financial institution of
exposing a customer's mortgage information to inappropriate requestors and complies
with the requirements of the Personal Information Protection Act.

Atsource also provides direct logins to users. These are based on using a user's email
address as the user ID and sending confirmation via email to set up password access.

E-mail Security

E-mail interaction is becoming the preferred method for requesting and sharing
information between legal and financial groups. This is happening despite the fact that e-
mail is inherently insecure. Atsource is well aware of the benefits of using e-mail to
speed the delivery of mortgage discharge transactions. We have carefully considered how
to best use the e-mail system for handling this sensitive information so that the benefits of
email can be realized in this process.

Atsource has chosen to use e-mail for the notification of events in the discharge process.
At no point is sensitive information passed along via e-mail. When sensitive information
is to be passed Atsource will notify the recipient of the availability of the information via
an e-mail which contains a web link back to the Atsource system. The user simply must
click on the link to activate the Atsource document. If the user is not currently
authenticated, they will first need to enter their user ID password before accessing the
information. This allows for rapid notification and access to the information without the
insecurity of the e-mail system.

A further refinement employed by Atsource is in the creation of the back-link itself.
Atsource creates a hashed code to identify the specific mortgage transaction. This
identifier is not a sequential number but rather a 10-digit character field comprising of 30
of the 36 uppercase letters and numbers. The identifier has two sources for the digits. The
first two-character positions are based upon the originating user, the balance a hashed
value from a random source. Together this yields a value space of 30^{10} or 5.9×10^{14}

possible entries. This would result in the odds of a person guessing a valid number as 1 in 1 billion! And should they actually find a valid ID they would still need to pass the user authentication process before having access to the data.

Internet hackers sniffing e-mail for useful information may be able to obtain the Transaction ID code from a notification e-mail but their attempts to access the sensitive information will be shutdown as they have no indication of the recipient's account and password. This yields a system that has the timeliness and convenience of an e-mail-based system but with none of the insecurity a simple e-mail approach carries.

Fax Services

Atsource provides increased security over fax receipt of Payout Letter requests and the fax back of Payout Letters. It is easy with today's environment for a person to fraudulently request mortgage information about a person through the use of the simple fax system. A person needs simply create a letterhead document representing a legal professional and add their own fax number. They would then draft a request for payout and fax it to the financial institution. The Recipient would then determine the information and fax the response back to the number on the received request. By utilizing the Atsource system this form of identity theft would be eliminated.

By employing Atsource for the discharge process the financial institution on receipt of the fax would not send their payout response directly to the requesting fax number but rather they would direct the requestor to initiate a discharge transaction with Atsource. The financial institution would then upload their payout response to Atsource who would then email the requestor a notification that their requested information is now available in the Atsource system along with the transaction identifier. The requestor would then log into Atsource and view the payout request. Since only Atsource users who are legal users can access the transaction this would restrict the people who can obtain payout information to valid legal representatives with the correct Atsource transaction number. This feature of the Atsource system alone greatly improves the security and privacy of the financial institutions customer data.

It is defined in the Privacy Act that the financial Institution is responsible to know who they are releasing information to. They must be certain that the requestor is legitimate otherwise they are in violation of the Privacy Act[2]. The Atsource solution provides a vital tool to the Financial Institution for ensuring the authenticity of those requesting confidential mortgage information.

Secure User Access

An additional strength of the Atsource solution is its ability to restrict access to the discharge process to the appropriate class of user. This feature which is managed by Atsource ensures that users are identified by their professional classification. This enables Atsource to control who can initiate a payout request and obtain confidential customer information. This feature, in itself, seems rather insignificant but with the growing requirements of privacy legislation knowing that only qualified individuals can request information helps the financial institutions with their mandated responsibilities in

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[2] Phil Embly in Conversation with the Privacy Commissioner, April 6, 2006

protecting their customer's information. As time advances and the incidence of identity theft increases this aspect of the Atsource solution alone will be of significant benefit to all parties involved.

Discharge Confirmation

Atsource employs a two-step process to ensure all discharge authorizations are properly authorized by the financial institution. This prevents sources outside of the financial institution from approving a discharge. Atsource achieves this through a multi-faceted approach. Step one involves establishing the financial institution as a registered member of the Atsource system. This process involves legal contracts and the setup of approved contact and routing information in the Atsource system. Once the Financial Institution is registered their identifier is added to the list of supported lenders in the Atsource system. Only registered institutions can be selected by the legal individual during the initiation of a discharge request. Once selected, the institution is locked and cannot be changed on the transaction. When the institution is ready to discharge the mortgage, they access the Atsource transaction and mark it as approved for discharge. This is completed by the institution signing into the Atsource system and selecting the correct transaction then marking it or by following the link in the earlier e-mail requesting the payout information and logging in to the Atsource system. The related transaction is immediately displayed and can be approved for discharge. Atsource then sends an e-mail to the institution's registered e-mail address for confirmation. An authorized member of the institution then clicks on the provided back-link to return to the Atsource system to confirm and authorize the discharge. Once the transaction is marked as confirmed, Atsource will complete the process of discharging the mortgage.

By employing this two-phase process Atsource will ensure that all discharges are approved by the proper authorized sources. This further reduces the possibility of persons using identity theft from discharging a mortgage.

Managed Data Centre

Atsource utilizes the services the of the Microsoft Azure Cloud environment for its production computing requirements. All servers used in delivering services to customers are handled through systems located in the Toronto Data Centre. To provide redundancy and disaster recovery support, replicated data is also stored in the Azure data centre located in Montreal. All data resides strictly within Canada.
The Azure environment offers multiple tools to ensure security and availability for its hosted systems. All data stores are kept in triplicate with auto-failover should a copy be lost. Virtual Systems can be resized and rehosted as required for the performance requirements of the application. An Internet Firewall is utilized to protect against intrusion attempts from reaching the servers. All systems are fully managed and maintained 24/7 by data centre staff ensuring that hosted systems remain online. Physical access to the servers is closely monitored and restricted.
To provide the highest levels of recovery support all servers and databases are backed up with the Azure recovery vault system which provides a robust environment for managing back-ups and recovery options. Disaster recovery tests are performed to ensure all systems can be recovered in a timely fashion.

Atsource maintains a replicated copy of the data in the Montreal data centre for disaster recovery. Should the primary site fail in Ontario, the Montreal facility can be brought on-line.

Document Security

The Atsource solution employs the Juricert certificate system to register all electronic discharges. This system employs the latest public key encryption technology and guarantees that the discharge is being performed by a legal professional in good standing. The mortgage discharge process is closely monitored by the Atsource team, this allows us to watch for missed responses from any of the associated parties involved with completing the discharge, and enables Atsource to complete the process in a timely fashion. Additionally, sensitive information is not available to staff not required to view it. This further protects the privacy of the actual mortgagees and related parties. By providing a proactive monitoring and problem resolution service, Atsource can ensure that mortgage discharges occur on-time and within the legislated time periods. Document security and privacy remain the highest priority at Atsource.

Atsource Mortgage Protector System ™ (AMPS)

The Law Society of Upper Canada has indicated that "Mortgage fraud has emerged as a serious issue in recent years and published estimates show its costing lenders and insurers millions, if not billions of dollars in losses in both Canada and United States." [5]
A key component of Mortgage Fraud is freeing up available credit through fraudulent Discharge of Mortgages. Atsource has addressed this component with AMPS. This is the only system of its type that enables Lenders to monitor, locate and address incidences of Mortgage Fraud. The product works in cooperation with the British Columbia Land Title and Survey Authority to report an occurrence of a fraudulent discharge of mortgages filed in the British Columbia Land Title Registry. This product is offered exclusively through Atsource and is free of charge for Financial Institutions employing the Atsource Discharge of Mortgage service.

Security and privacy are becoming harder to maintain in our technological society and as a result, governments are starting to mandate higher levels of responsibility upon the holders of sensitive information. Atsource has developed a solution to one of the areas which can make a financial institution vulnerable to not only privacy breaches but also their own loss of financial security. By employing the Atsource solution an institution can rely on secure systems and processes in their mortgage discharge process, resulting in less cost to themselves and more security in the process.

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[5] The Law Society of Upper Canada, Mortgage Fraud March 2005 - Report to Convocation