

### PayThat Has a Superior Business Model and Adoption Path

Using the four innovative adoption use cases detailed in the Proposal (see pages 75-123), the entire PayThat Network would be worth \$29.58 billion to \$34.35 billion. Between one and eight FIs can obtain a license to own, build and deploy a PayThat node, called a PayThat Clearing Bank. If only one large or medium sized FI adopts PayThat and obtains 100% market share of the four use cases detailed in the proposal, the value of its PayThat Clearing Bank would be \$28.64 billion to \$32.8 billion. If the maximum number of eight FIs purchase licenses and deploys a PayThat Clearing Bank and split the market share for PayThat services equally, for a modest investment to purchase a license, they would own a fee driven business that for each of the eight licensees would be worth \$3.58 billion to \$4.1 billion within three years if they achieve that average market share of 12.5%. The PayThat Corporation itself would be worth \$940 million to \$1.55 billion (see page 104 of the Proposal). One to four additional overseas FI licenses would be available that would generate significant additional value.

The key problem with any new U.S. payment system proposal is achieving adoption. We have outlined four niche adoption use cases that are compelling:

- Use Case #1 is worth at least \$1 billion for the PayThat enabled Health Information Exchange payment system proposal as the PayThat HIE services will capture a portion of the \$4.5 billion off administrative costs for doctors and hospitals, private health plans, states and other government health plans that HHS has estimated can be saved by adoption of such a system over the next 10 years (see pages 75 & 79 of the Proposal).
- Use Case #2 Each PayThat Clearing Bank would own a fee driven business that would have a value of between \$780 million and \$1.30 billion at the end of the third year after the launch of the First Class Email product (see page 106 of the Proposal).
- Use Case #3 is worth at least \$1 billion for the Single Window for Cross Border Trade Facilitation & Supply Chain Billing (see pages 108-112 of the Proposal)
- Use Case #4 is worth \$10.2 billion for the credit bureau alone and likely at least double that for the IAF (see page 114 of the Proposal).

Since the PayThat Corporation would be worth \$940 million to \$1.55 billion (see page 104 of the Proposal), and potentially more as international business grows, and because the cost to build the four use cases targeted by the PayThat Payment System is under \$100 million, this is an attractive venture capital opportunity.

### PayThat's Technical Design Using "Network of Networks" & "Data Centric Encryption"

PayThat uses a superior "Data-Centric" approach to encryption and a "network of networks" architectural approach leveraging XML and XML tagged data pushed to edge servers from legacy applications, extending the usefulness of legacy applications and dramatically lowering cost of adoption for innovative solutions. The architecture methods of PayThat enable the following positive attributes as opposed to the negative attributes of the legacy payment systems and other emerging innovative solutions now deployed in the United States (see page 10 of the Proposal):

Because PayThat uses a "network of networks" architectural approach leveraging:

- XML

- XML tagged data pushed to edge servers from legacy applications
- Mapping; and
- Interoperability standards
- Edge Servers
- a “Data-Centric” approach to encryption

interoperability among legacy infrastructures such as legacy bank platforms and bank payment systems can be ensured, extending their usefulness and dramatically lowering cost of adoption for innovative solutions. The points of integration are greatly reduced and legacy systems are unaffected in their daily operation. See pages 120 to 123 for a more detailed description of the “network of network” architecture and methods of implementation.

In the PayThat use cases, the only points of integration are between the PayThat Clearing Banks, which serve as “edge servers” for traditional Depository Institutions and the payment systems of those traditional Depository Institutions. The integration required is equivalent to a banking corporate treasury workstation. The integration is modest and should only take weeks. By design and purposefully the amount of IT integration with the systems of legacy Depository Institutions is kept to a minimal level. Since most corporate treasury workstation solutions support data exporting and data importing, the challenge is mostly reduced to mapping and by using state of the art mapping automation tools, which have low six figure costs, the technical challenge is low and the technical risk is low.

Creating XML tagged databases is also a task where the technical challenge is low and the technical risk is low. Where any of the use cases require interaction with any pre-existing legacy solution, the same architectural approach and means of integrating and creating a means of enabling data interoperability will be used: data will be pushed to edge servers from legacy applications, where the data is XML tagged by individual data element and encrypted with Persistent Digital Security (a/k/a Digital Rights Management).

By using a “Data-Centric” approach to encryption where data access is controlled by role & authority on a transaction level basis, access to all data is controlled by users at the network nodes where the edge servers reside with access controlled by rules enforced by strong encryption, providing greater control & security. This technical solution greatly enhances personal privacy and if and when PayThat achieves market dominance, it will destroy the economics of the identity theft criminal ecosystem.

Among PayThat’s technical advisors is Ed Scheidt, the Chief Scientist and Co-Founder of TecSec, who is also the retired Chairman of the Central Intelligence Agency (CIA) Cryptographic Center and the Chair person for ASC X9F, which develops the cryptographic standards for the U.S. financial services industry.

The “network of network” technical design has been successfully deployed for 10x to 100x lower cost than traditional “single network/single solution/single database” (SSS) solutions. SSS technical solutions also carry a high probability of project failure, while “network of network” solutions such as PayThat have low technical risk.

#### The Global Payment Gateway:

The Global Payment Gateway (GPG) is a web service built by Depository Institutions that communicates through and leverages legacy payment networks in each country around the world to enable cross-border payment functionality in real-time leveraging RTGS and ACH payment

systems around the world. The concept was first piloted in the Universal Value eXchange (UVX) pilot of the Financial Services Technology Consortium (FSTC). Several major banks have since built GPGs including Wells Fargo and Chase Bank. The PayThat Payment System would either utilize one or more of the existing GPGs selected by RFP, or build a new one in partnership with a large bank selected via RFP. Building a GPG is a low-risk project. See pages 54-57 of the Proposal.

#### Achieving Strong Enrollment & Strong Authentication While Achieving Rapid Adoption

We have designed robust security, enrollment and authentication of users of PayThat. However, we have built in best practice to achieve strong enrollment and strong authentication without discouraging adoption. The key to achieving this balance is to start at a commercially reasonable initial lower level of enrollment and authentication and then require customers to jump over additional hurdles when they wish to perform a transaction that poses more risk than the risk model allows prior to increasing the assurance of identity and authentication status. Customers have a high willingness to comply with additional requirements if they have a pending transaction that they wish to complete. As noted on pages 25 & 32-33 of the proposal:

“End-users will be required to jump through additional incremental enrollment barriers as they wish to do progressively larger and/or more risky transactions (e.g. red flag industries, such as a transaction with a Money Services Business (MSB) vendor or higher risk transaction types, for example purchasing wine where a minimum age requirement must be met, and international transfers, or prohibited transactions, such as a gambling transaction prohibited by Regulation GG). Improvements in the degree to which identity is proofed should be multi-faceted and incremental with no single solution or step which is final. Some devices are inherently more secure than others and therefore the devices will be risk-rated and escalation of security methods will occur more rapidly with less secure devices.”

#### Secure Internet Payments: What is needed?

- Intuitive and easy to use & adopt
- Something as easy as email
- Platform/device independent & agnostic:
- Secure way to send money over insecure email & telecommunication networks
- Greatly enhanced consumer privacy and the elimination of the identity theft ecosystem.

PayThat and the Identity Assurance Federation, a federated identity management service, can achieve all these requirements.

Adoption is the key. What will be the successful adoption use cases that actually gain mass market acceptance of a new, more secure payment system and identity management system?

We have developed six detailed use cases and business models, each of which is large enough to move the needle at even a large financial institution. Four use cases were detailed in the proposal at length. A high level summary of each use case follows:

#### First Class Email Use Case

- 20% or more of Bank Employees typically click on malicious email links.
- If the CryptoLocker virus is combined with the Stuxnet worm and a time delayed payload bomb to corrupt data stored in backup files, no U.S. bank would survive because of the length of time required to restore from a good backup not impacted.

- The use of wild email will be unsafe and unsound for banks and business in the near future.
- PayThat will move the banking industry away from wild email to “First Class Email”.
- Under “First Class Email”, no unauthenticated email will be presented to email users. All malicious spam will be blocked at the “First Class Email” Simple Mail Transfer Protocol (SMTP) gateway.
- PayThat network rules will create a protected zone of the internet, where only authenticated users can send or receive email and where senders of all email must attach a valid, good funds, immediately negotiable electronic check in the form of a PayThat Token in the amount of at least one U.S. cent.
- By substantially raising the cost of spam, the economics of the hacker gangs will be fatally undermined. As a major side benefit, the productivity of corporate workers will rise substantially as unwanted spam is eliminated from their daily routine and they will actually earn money to receive and read any unwanted “First Class Email”.

#### Healthcare Payments Use Case

- The healthcare sector is the largest single industry in the U.S., contributing 17.6% of the nation’s GDP, however it has the lowest adoption of electronic payments with 95% of healthcare related payments ending up ultimately as a paper check.
- Administrative overhead is high at 30% of overall costs because healthcare claims data (held by healthcare insurance firms, FIs and healthcare providers) and healthcare clinical data (held by healthcare providers) are siloed in separate business processes and reconciliation between the two silos is time consuming and expensive. Consumers receive healthcare bills & Explanation of Benefits (EOBs) that are not synchronized and frequently contain non-reconciled differences.
- Healthcare providers, because they typically only rely on user name and password to access HIPAA controlled PII and have rarely deployed encryption to protect their data, have experienced rapidly rising security breaches.
- More secure identity management systems combined with health information exchange services using a “network of networks” & “data centric” data encryption approach and payment automation offer the prospect of greater security, enhanced privacy and over \$4.5 billion in cost savings just from the widespread adoption of electronic payments. A portion of those savings will accrue to the FI service providers.
- PayThat’s Payment System and PayThat’s Identity Assurance Federation (IAF) can achieve these efficiencies.
- Starting with a pilot implementation in Michigan covering 1.5% of the population the U.S., PayThat’s healthcare payments automation services will be adopted by other health information exchanges nationwide and ultimately roll out to the entire U.S. population and to mass merchants through their retail pharmacy operations.

#### Cross Border Trade Use Case

- To import or export goods into or out of the United States, signed documents must be procured from 33 different federal government agencies. This is an expensive,

complicated and time-consuming paper intensive process. Most smaller manufacturing firms based in the U.S. are discouraged by these barriers from exporting.

- The Single Window allows a firm that wants to export or import any goods across the borders of the U.S. the ability to obtain all the documents required by filling out just one intelligent web form. At the end of the process, the End-User digitally signs the intelligent web form once and the required information, certificates and documents are prepared behind the scenes in an automated fashion by the various government bodies. Certificates and documents are created in real-time on-line and delivered in a secure electronic portal to the End-User by accessing the databases of the applicable government agencies. The interoperability with the legacy government agency applications would be accomplished using “edge servers” and the “network of networks” technical design.
- President Obama signed an executive order in February 2014 directing the federal government to establish a “Single Window” to facilitate cross-border trade by December 2016. This is a large effort across 43 federal government agencies. However, to date, the federal government effort to implement the Single Window is not focused on any business use cases or adoption strategies and has little functionality.
- Detroit, Michigan, home of the U.S. auto industry and site of the largest customs port of entry, is a natural candidate for a “Single Window” pilot focused on the automotive supply chain.
- The Single Window earns fees for the basic service and from value added services offered through the Single Window to End-Users. PayThat’s Payment System and PayThat’s Identity Assurance Federation (IAF) is a critical component to achieving these revenues & efficiencies.

#### Identity Assurance Federation & Credit Bureau Use Case

- There is no trustworthy web service that can strongly enroll and authenticate to NIST Level 3 or 4 consumers or business employees to enable sufficiently strong cyber security to safely engage in e-commerce.
- To comply with Anti-Money Laundering (AML), Bank Secrecy Act (BSA) and the new Foreign Account Tax Compliance Act (FATCA) laws, each bank is now required to know and identify their customers, understand the business of each customer and understand the transactions flowing through their customers’ deposit accounts to non-customers. To actually and fully comply with these requirements is a near impossibility if the regulations are strictly applied, however, non-compliance carries with it the possibility of massive multi-billion dollar fines and severe reputation risk. The cost for each bank to individually do this work is far more costly and carries much greater compliance risk than if the work were outsourced to an industry back office utility, a bank owned Identity Assurance Federation (IAF).
- The IAF service will validate identities and perform identity management. The IAF can provide these services at much lower cost than any Depository Institution or any other party.
- Because the IAF builds a database of attributes related to individual and corporate participants and End-Users, the IAF can append additional data about these participants and End-Users at low cost. The appended data can be used to build a Depository

Institution owned Credit Bureau and a Depository Institution owned B2B Directory. The value of the U.S. credit bureau industry, currently owned by non-banks, is \$17 billion. Because much of the valuable data resident in the existing credit bureaus is supplied to them for free by FIs, the IAF's credit bureau should be able to achieve a 60% market share of the U.S. credit bureau industry, creating \$10.2 billion in value for the owners of the IAF.

#### Unbanked Use Case

- Why Don't Banks Seek Low-Balance Deposit Accounts? Using traditional methods, low balance accounts lose money.
- To be profitable a bank account must have:
  - Average deposits of \$600 to offset paper statement costs:
    - $\$0.50 \text{ per month} \times 12 = \$6 \text{ per year}$ . If cost of funds is 1% ( $\$6/.01 = \$6 \times 100 = \$600$ );
  - Incur overdrafts or other fees to offset cost of teller services:
    - Teller transactions cost \$2 each on average;
    - Branch system brick and mortar is costly.
- With internet/mobile phone based deposit accounts serviced remotely, ALL accounts with balances can be profitable:
  - If customers require any unusual service needs they pay by the minute used via 900# customer service;
  - 100% electronic access allows the overhead associated with an additional account to be very close to zero.
- Mobile Phone Based Banking: What is needed?
  - Intuitive and easy to use & adopt, "Something as easy as email";
  - +90% of Internet users use email;
  - Something that uses either email or text message:
    - In U.S. the average number of monthly:
      - Phone calls = 204;
      - Text messages = 357;
  - Platform/device independent & agnostic: PC, Mobile Device, Any Platform;
  - Secure way to send money over insecure networks.
- PayThat & the IAF together achieve each requirement. Its design was the model for India's new national payment system and biometric IdM system, with 600 million new users within the first year. Most of them had never been banked before.

#### Replacement for SWIFT Use Case

- SWIFT, the current main cross-border payment system uses an insecure network node design methodology and has suffered a series of major breaches.
- SWIFT is a messaging system only, and does not perform settlement or clearing. Outside of the OECD countries, it often takes one or two weeks to get international transactions settled and cleared. There is no visibility of the status of a payment until it arrives and multiple banks can often be involved in a single transaction.

- PayThat could serve as a SWIFT replacement focusing on small businesses that do business in two or more countries in the developing world.
- The IAF would provide strong enrollment including Know Your Customer due diligence.
- A Global Payment Gateway would enable same day settlement in every national payment system around the world.
- Banks would find it useful as international wires are a major regulatory risk and service quality is low.
- Once the system is built for this use case it can easily be extended into additional use cases including the five outlined above.
- If SWIFT doesn't replace its system architecture with a more secure PayThat equivalent, PayThat might ultimately replace SWIFT by taking its customers away.