

To: [REDACTED]

Re: [REDACTED]

2015-03-04

Executive Summary

[REDACTED] is in a market where any estimates of growth would likely be conservative. The advent of cloud storage has decreased the costs of infrastructure to a level where the barrier to entry for massive data uptake is negligible for even the most conservatively-funded startups. The Internet of Things (IoT) will do to dwelling spaces what Amazon's recommendation engine did for shopper experience. But in a world saturated with data, it is no longer itself king. Only those who filter out the noise and make meaningful operating decisions or suggestions will succeed. As with every learning algorithm, early entry is necessary but not sufficient. [REDACTED] has 3 easy steps for "onboarding" new customers. It must have a fourth: (for fear of infringing on a scientific association's trademark we must write it out: Analysis as a Service.

tl;dr

Every early platform faces obstacles to its scalability that stand to impact operations, profits and, possibly, reputation. This is because most early platforms begin as custom projects and, if too many are taken on at once, client services eclipse the business plan. However, custom work cannot be sidelined. It has tremendous value, not only as wide-reaching advertising, but also as customer-funded R&D. At this stage it is important to compartmentalize development efforts, make judicious use of overseas consultants for rapid staff-augmentation, and segregate the maturing platform from custom implementations while introducing appropriate seams in the product that will enable future custom work to be as automated as possible with little or no developer involvement. [REDACTED] is in this stage.

The IoT has analogue to two prior technological achievements. Do you remember what we did before we "Googled?" The search engines of the time weighed importance with a mix of header text, keywords and other bizarre secrets that were often little more than the opinions of the engine's authors. In many ways, assigning value through keyword-weighting was the equivalent of inferring a speaker's expertise about a subject by how loudly and frequently she screamed about it. Google was a better mousetrap not because they were the first to afford enough computing power to scrape a billion web pages and apply an "Impact Factor" that scientific journals had been using for a century but because they turned the process into a massive machine learning experiment that has been running for nearly 2 decades on a platform built for flexibility and growth. Any success with the IoT must aspire to similar heights while building out similar roots.

The other analogue is not as grand as Google but is evident to anyone who has done repair to a modern vehicle. The IoT is already hard at work to make the world safer and improve our quality of life. I recall a time when cars were fixed by mechanics. Today, they are called “technicians” and the name-change is appropriate.

In the not-too-distant past, I could argue about needing to change oil or brake fluid. Today, the technician plugs in a computer and harvests vast quantities of sensor data fitting perfectly with the definition of the IoT. He presents me with a datasheet that informs me of the quantity of impurities floating around in my brake fluid compared to the recommended safe quantity a suggested course of action. And...the price. The recommendation engine is the dot-connector.

The IoT has potential to turn data into action that would serve to improve the quality of life of everyone it touches. Not only do I benefit from timely maintenance of my vehicle that would save me costly repairs later but it also benefits everyone sharing the road with me in case I was not aware that my brakes were leaking fluid. But the key differentiator is the data that the car collects is only worth something as it's turned into actionable insight through a history of successful operation. The decision pyramid that [redacted] hopes to implement is significantly more valuable as their learning grows.

[redacted] has one other competitive advantage: it is based in Chicago, the interiors capital of the country. Once SOA (service-oriented architecture) has taken root in the platform in a self-sustaining manner, [redacted] can expand its footprint by enabling easy portability from designer tools like AutoCAD and Revit to its ecosystem. There is no reason IoT should be limited to after-market shoppers. Autodesk software is a deeply-ingrained industry-standard that offers rich metadata annotations and some of the best APIs outside of Microsoft. Here, IoT can attack the \$8 billion¹ Interiors market offering substantial discounts given that a single firm can serve as “feeder” for so many end-users. A projector-enabled showroom located in the Merchandise Mart would be as good an advertisement as several high-profile customer successes. With design comes construction and the trades and repair. Capturing them all will be very lucrative. IoT exists in the minds of many as rubies in the rough. The companies that execute now will be rails.

¹ <http://www.asid.org/content/state-industry>

To:
Re: Shiftgig

2015-03-04

Executive Summary

SG specializes in a market previously ignored by professionally-oriented social networks. The problem that it solved was an important one. Before, service professionals had to network with friends, scour classifieds and/or go door-to-door to find work. This was inefficient for both workers and employers. Shiftgig created an online marketplace for the transaction of such business with an eye to building out the first social network dedicated to the space. But this is only the beginning. A perusal of the SG twitter feed reveals the endgame: increased profits for the service industry through great efficiency and happy staff.

tl;dr

Turnover in the service industry remains a huge impediment to efficient operations. What the Economist dubbed “100%-turnover” industry in 2000 wasn’t quite so bad but still stuck stubbornly high at 62.6% in 2013¹ - this compared to the overall private sector’s 42.2%. SG’s insight was that this was a part of service life. After the denial, isolation and anger that accompanied those figures, acceptance on the part of service businesses will be a huge step forward. SG’s foot-in-the door was an exchange that removes impedance from the hiring process. And it did so marvelously. But the end-game is so much farther reaching.

The advent of virtualization had, in a matter of 5 years, reduced the cost of “ownership” of computing to zero. Wrapped into the single figure that is the hourly cost of the compute cloud are all the details previously minded by the customer. But the cloud required a change of thinking in developers. Instead of planning on reliable equipment that would never need a reboot, commodity hardware required planning for certain failure. Netflix, a pioneer in cloud-based customer services (and AWS’s biggest customer) has an amusing system put in place that ensures developer fidelity to corporate quality standards. It’s called the simian army². Chaos Monkey is a service that randomly disables production compute instances (and lots of other ‘monkeys’ do other evil things to force the plan for them) and the pinnacle is Chaos Gorilla which simulates the outage of an entire AWS availability zone. When working with cloud “hardware,” developers are forced to plan for failure. Imagine how much easier a restaurateur’s life if she consistently planned for failure (of staff attendance) but didn’t have to buy redundancy like a developer doesn’t need to buy hardware. This is what SG can and will achieve.

¹ <http://bit.ly/1aLt2Nv>

² <http://nflx.it/18PxYAv>

SG's pinnacle of success will be the creation of a Service Cloud. (It should avoid a fight with Salesforce about the name though...for now.)

It is difficult to speak of human individuals in the same terms as compute instances. However, the industry-wide turnover and lapses in reliability make the analogy fitting. Hiring a staff of competent service professionals is essential for every service-oriented business. Even if a firm is completely cloud-based, it still must supply its staff with terminals with which to connect up and a reliable Internet connection.

In the service industry, every business has a mode of operation but at the root of all exist primitives beyond which one cannot reduce further. Amazon's remarkable insight in 2006 was that such computing primitives can be amassed at scale and leased to those who wished to use them. Storage, processing and memory are such primitives. In a restaurant, perhaps primitives are the cooking or bar line along with the order taking and delivery. Before objections start to fly please remember that in the majority of dinners, your food will be delivered by someone other than the person who took the order and your water refilled by someone else entirely. We are lax to notice this because the roles are indeed as interchangeable as a hard disk in a storage server's RAID. For this reason, a server from one restaurant will have no problem working at another with just a little bit of preparation. Indeed this frictionless transitioning is partially responsible for the turnover rates. So why not capitalize on them?

SG has built an exchange on which service jobs are traded. This exchange will pay the way to an all-encompassing social network that will ultimately stand to improve the service industry experience for owners, workers and even customers. By pushing owners who subscribe to its service cloud, SG will encourage them to standardize its service primitives instead of operating on bespoke fringes where they shouldn't. This standardization will enable workers to fluidly move throughout the Shiftgig ecosystem with minimal impedance from strange or ineffective business rules. 2-sided reviews can keep owners and service professionals honest like they do for buyer and seller on eBay. This injection of redundancy and efficiency into the service industry will have positive financial impact on every aspect of the business culminating in increased customer delight.

The customers will enjoy it too until the lenses of the service cloud focus in on them and begin grading their humanity as customers. If they are prone to making scenes. Or leaving pittance for a tip.

To: Team Rush, Team Krsnik, et al.
Re: Wintrust Financial

2017-02-24

Executive Summary

Born in 1991, a year of double-digit mortgage rates, WTF is a holding company that owns 15 banking subsidiaries chartered nationally and in the states of IL, IN, and WI. WTF offers small-branch services to (mostly) suburban clientele around the Chicago metro area. In addition to its concentration in the field of retail banking, WTF offers customers commercial lending services, mortgages, insurance and the lucrative wealth management. The holding co seems to be the single focal point for all the subsidiaries' information and technology needs and their subsequent solutions. It also appears to be the single point of failure. WTF is a public company and its [most recent 10k](#) speaks at length of the burdensome requirements for financial institutions and the risk inherent in the same. Pg27 speaks about risks inherent in technology. WTF can and should begin here. There are too many points about WTF's IT for a brief (and I've never been brief in my life anyway). We should help WTF use some of their [fantastic recent stock performance](#) to harden their technology plan and make their customers and operations safer.

tl;dr

Web: Disclaimer: I write this as a techie customer whose first point of interaction with a financial institution is the web browser. I fully understand that the (mostly) older and suburban clientele in WTF's book-of-business is likely NOT to be. But the dated look and feel of their window to the world (wide web) will not likely go unnoticed by anyone who surfed around within the last few years.



The holdings' individual web sites have the exact same look and feel....because...they all come from the same generator and template:

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Community Banks | Win... X http://www.wintrust.com/c... X Welcome | Crystal Lake...
view-source:http://www.wintrust.com/community-banks
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
2 "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd">
3 <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" version="X
4 xmlns:content="http://purl.org/rss/1.0/modules/content/"
5 xmlns:dc="http://purl.org/dc/terms/"
6 xmlns:foaf="http://xmlns.com/foaf/0.1/"
7 xmlns:og="http://ogp.me/ns#"
8 xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
9 xmlns:sioct="http://rdfs.org/sioct/ns#"
10 xmlns:sioct="http://rdfs.org/sioct/types#"
11 xmlns:skos="http://www.w3.org/2004/02/skos/core#"
12 xmlns:xsd="http://www.w3.org/2001/XMLSchema#">
13
14 <head profile="http://www.w3.org/1999/xhtml/vocab">
15 <meta http-equiv="Content-Type" content="text/html; charset=utf-8
16 <link rel="shortcut icon" href="http://www.wintrust.com/sites/defau
17 <link rel="shortlink" href="/node/133" />
18 <link rel="canonical" href="/community-banks" />
19 <meta name="Generator" content="Drupal 7 (http://drupal.org)" />
20 <title>Community Banks | Wintrust</title>
21 <style type="text/css" media="all">
22 @import url("http://www.wintrust.com/modules/system/system.base.css
23 </style>

```

Drupal, like Joomla (and their ilk) are lovely, free, open-source blogging engines designed to make web publishing as easy as possible for the masses. They also have vibrant user-driven communities that support and fix things as they see fit. Such communities are very good at solving complex problems affecting a large segment of themselves but are almost always terrible at working off the long tail of one-off issues. Intellectual challenge of solving someone else's problem is not usually enough to drive a programmer to sit through hour 15...to say nothing of 50. They also see frequent updates with minimal centralized control that can easily result in huge show-stopping bugs or security flaws. It's one thing for a scrappy start-up to save precious cash and use an OS blog-engine. It's a whole other matter for the same to be done by a wealthy finance holding company. Although most do, it's not necessary to build your own content management (CMS) so long as one is careful to update regularly. An attacker wishing ill to any of WTF's properties can simply search for a list of flaws fixed since 2011 (the last time Drupal 7 was updated) and try them one by one. It's not likely to result in dramatic financial losses but the vandalism would serve to make the customers inquire what else is insecure.

drupal 7.0

Posted by webchick on January 5, 2011 at 6:21am

Release notes

Changes since DRUPAL-7-0-RC-4:

Download	Size	md5 hash
drupal-7.0.tar.gz	2.6 MB	e96c8a5e47c5d7706897384069dfb920
drupal-7.0.zip	3.05 MB	d54d0c34bddbf003c523116b0006762e

Last updated: 5 Jan 2011 at 06:26 UTC

Official release from tag: 7.0

[Read more](#) - [View usage statistics for this release](#) - Categories: 7.x , Bug fixes

DNS & Mail: WTF and its proxy-fin subsidiaries outsource their DNS to Network Solutions. This is far better than serving DNS internally as some companies stuck in the mid-2000s still might do. However, a safer alternative is to outsource the task twice or thrice. Many companies use a combination of their domain registrar, UltraDNS and one or more cloud providers to ensure maximum coverage. Azure now has full DNS support and Aloyts.org has never experienced any downtime. (Although Aloyts.com has and I was crafting a complaint until remembering that I serve it via AWS's route 53. ☹)

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Select Command Prompt
C:\Users\sialoyts>nslookup -type=soa barringtonbank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

Non-authoritative answer:
barringtonbank.com
    primary name server = ns89.worldnic.com
    responsible mail addr = namehost.worldnic.com
    serial = 116001317
    refresh = 10800 (3 hours)
    retry = 3600 (1 hour)
    expire = 604800 (7 days)
    default TTL = 3600 (1 hour)

ns89.worldnic.com      Internet address = 207.204.40.145

C:\Users\sialoyts>nslookup -type=soa thebeverlybank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

DNS request timed out.
    timeout was 2 seconds.
*** Request to col1-dns-02.redmond.corp.microsoft.com timed-out

C:\Users\sialoyts>nslookup -type=soa thebeverlybank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

Non-authoritative answer:
thebeverlybank.com
    primary name server = ns63.worldnic.com
    responsible mail addr = namehost.worldnic.com
    serial = 116001915
    refresh = 10800 (3 hours)
    retry = 3600 (1 hour)
    expire = 604800 (7 days)
    default TTL = 3600 (1 hour)

ns63.worldnic.com      Internet address = 207.204.40.132
  
```

The more concerning fact is that WTF does not host a cloud email tenant. They run their own for themselves and likely all their subs.

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Command Prompt
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\sialoyts>nslookup -type=mx thebeverlybank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

Non-authoritative answer:
thebeverlybank.com      MX preference = 5, mail exchanger = wtfcip1.wintrust.com
thebeverlybank.com      MX preference = 10, mail exchanger = wtfcip2.wintrust.com

wtfcip1.wintrust.com     Internet address = 107.0.151.26
wtfcip2.wintrust.com     Internet address = 50.200.174.18

C:\Users\sialoyts>nslookup -type=mx barringtonbank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

Non-authoritative answer:
barringtonbank.com      MX preference = 10, mail exchanger = wtfcip1.wintrust.com
barringtonbank.com      MX preference = 5, mail exchanger = wtfcip2.wintrust.com

wtfcip1.wintrust.com     Internet address = 107.0.151.26
wtfcip2.wintrust.com     Internet address = 50.200.174.18

C:\Users\sialoyts>nslookup -type=mx crystallakebank.com
Server: col1-dns-02.redmond.corp.microsoft.com
Address: 10.222.120.24

Non-authoritative answer:
crystallakebank.com      MX preference = 10, mail exchanger = wtfcip2.wintrust.com
crystallakebank.com      MX preference = 5, mail exchanger = wtfcip1.wintrust.com

wtfcip2.wintrust.com     Internet address = 50.200.174.18
wtfcip1.wintrust.com     Internet address = 107.0.151.26

C:\Users\sialoyts>
  
```

A single outage in the Midwest or with Comcast cable (which NEVER has outages until they do) would be enough to bring down the WTF mail empire.

Network	
Net Range	107.0.0.0 - 107.5.255.255
CIDR	107.0.0.0/14 107.4.0.0/15
Name	JUMPSTART-5
Handle	NET-107-0-0-0-1
Parent	NET107 (NET-107-0-0-0-0)
Net Type	Direct Allocation
Origin AS	AS7922
Organization	Comcast Cable Communications, LLC (CCCS)
Registration Date	2010-06-29
Last Updated	2016-08-31
Comments	
RESTful Link	https://whois.arin.net/rest/net/NET-107-0-0-0-1
See Also	Related organization's POC records.
See Also	Related delegations.

SQL: WTF has a self-confessed 110 SQL Server instances running both on bare metal and via virtualization. This was the subject of this week's HiPo meeting with BlueMetal at WTF. The full implications of this is not yet know. However, WTF does seem to outsource much of its authentication and I assume authorization (NOT the same!) to third parties, ultimately, full responsibility will lay with WTF.

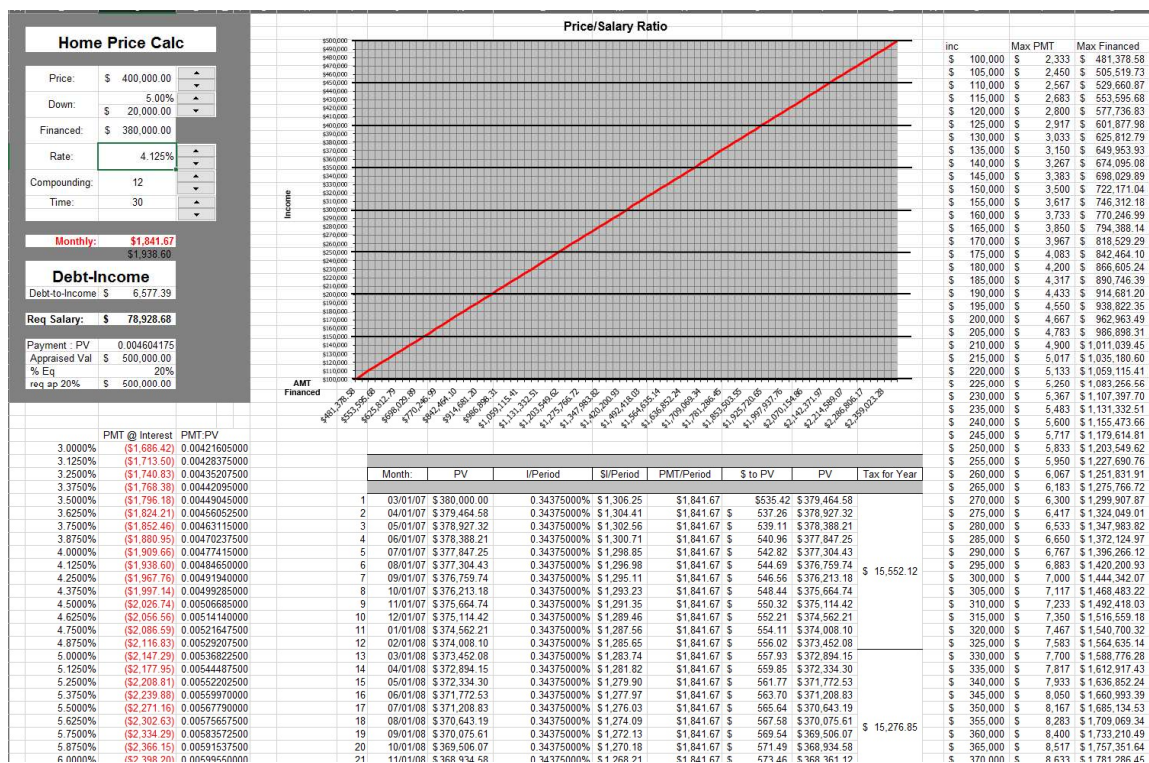
SQL DW: Obviously, any company with data feeds from many disparate, differently-aged sources will have unstructured-data needs. I'm just not sure WTF knows it yet. In a world used to 3NF, the data warehouse was never itself king. And a data lake was ??? We might try to change that.

Forward Looking

WTF has seen tremendous success in the last few quarters as told by its dizzying ascent in stock price. I fear that this is in spite of its technology and not because of it. This also likely means that most of WTF's clientele don't care enough about the issues your humble, yet paranoid DPSA finds disturbing. This also means there is a rich, ripe market for the company.

Mortgages: have fallen out of vogue after the last crisis but I believe this duration is short-lived. How nice would it be to enter some minimal information, Excel-style, and get a full-page snapshot of what one can afford in terms of home price and at what salary? What the amortization sched would look like and what the annual deduction could be?

I miss the 1-page snapshots of a situation. The web does not require pagination. Its introduction is a play to MAX() pageviews and is abuse. Of a high order.



Facial Recognition: In keeping honest to its roots, WTF can install Cortana's Intelligence Suite's tools as Demoed by Mr. Cernivec at the last PTEPs to determine who is walking in, ID them if possible and if not, at least assess their mood. I think the best advantage of an older clientele is the minimal chance of broaching the "uncanny valley" as they might actually think that people would recognize them.

Summary

There are many avenues for WTF to improve its operations and enter the age of virtual computing. It should begin with email service or web while BlueMetal is handling their data. We can help with early stage and every stage below. Having met with Scott (not my PSS), I am not sure about their receptiveness or hunger. After the kickoff with BlueMetal, I think we might be.



– Aloyts

23 Feb 2017