



Data Analytics

Stan Farmer, Executive Consultant
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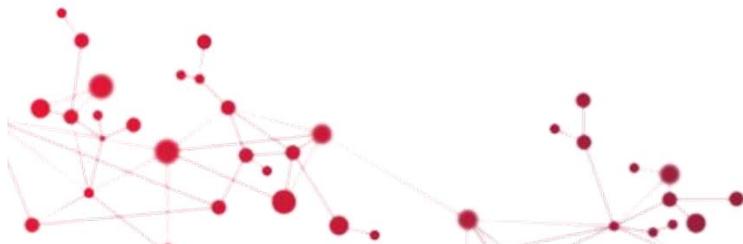
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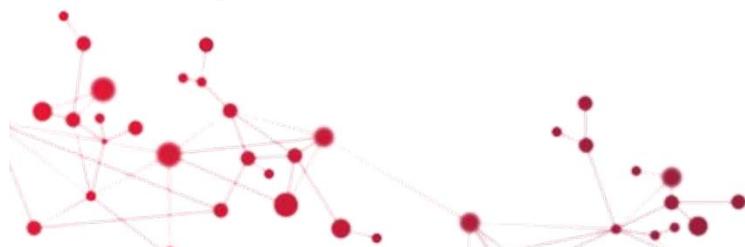
Agenda

- Analytics at Tax Agencies: a historical perspective
- Opportunities for Analytics at Tax Agencies



Analytics in Tax Administration

- Analytics has been a part of Tax and Revenue since its inception
 - Audit Selection
 - Thresholds on return validation
 - Collection Strategies and assignments
- Dramatic explosion in the amount of data available at a relatively low cost
- Modeling tools and techniques have reduced effort to build models
- However, while the world has embraced analytics, revenue agencies have been slow to follow...



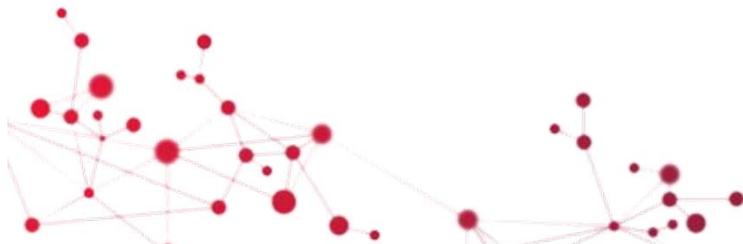
Tax agencies change slowly

- Do you select field audits in a manner similar to 10 or even 20 years ago?
- Do you use data to identify opportunities improve customer service channels?
- Private Sector is generally way ahead of the Government – using data to:
 - Changing their web sites based on usage
 - Select customers for loans (including rates), payment agreements terms
 - Customer segmentation – one size does not fit all
 - Proactively identify potential fraud
 - Identify opportunities to move customers to lower cost channels



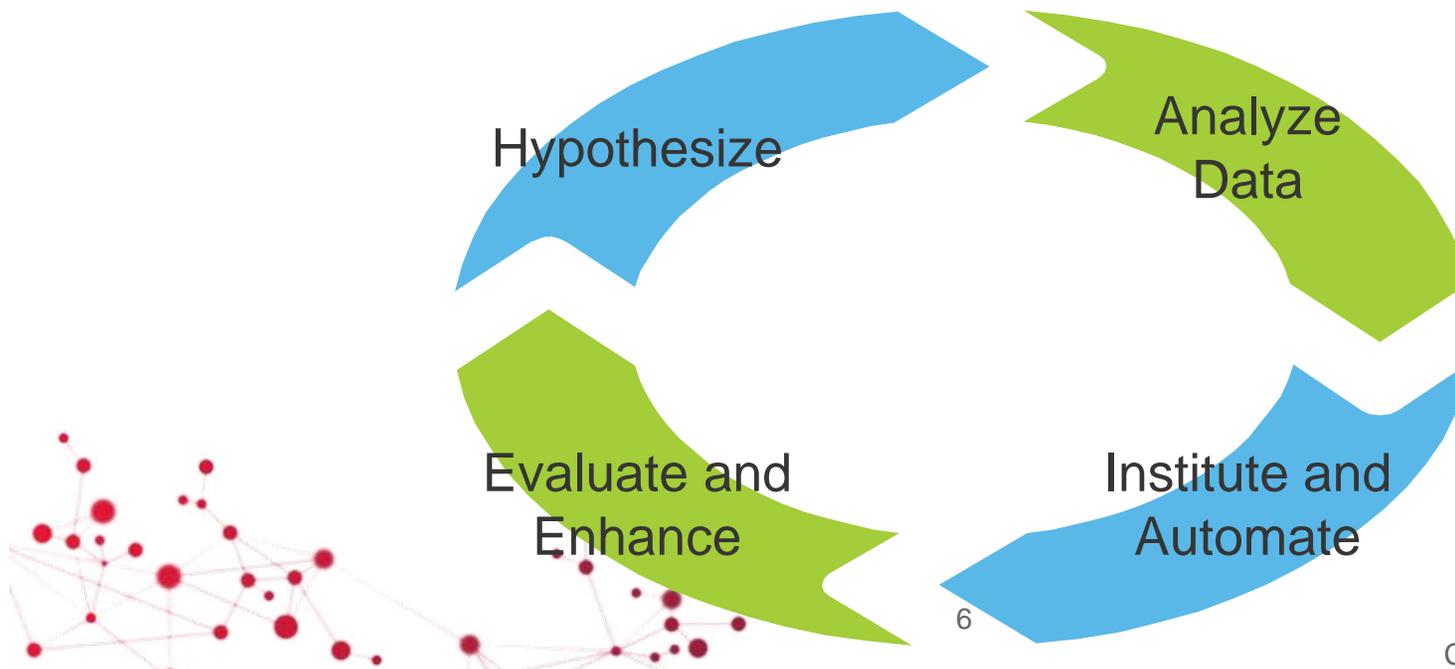
Fairness...

- Fairness is of critical important to tax agencies
- Does that mean treating all taxpayers the same?
 - Fairness to the public
 - Fairness to groups of taxpayers
 - Fairness to the taxpayer
- Do all taxpayers need to have the same sequence and timing of responses?
- Do all taxpayers need to receive the same letter?



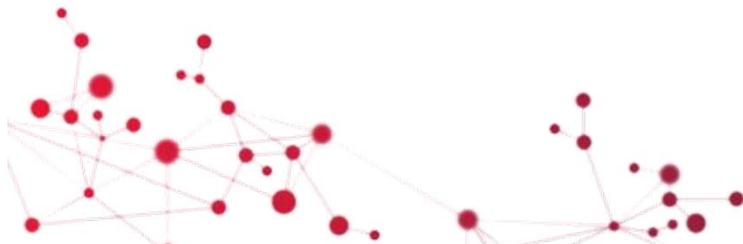
Using data to make better decisions

- The value of the data is to achieve better business results
 - Determine what questions you want answered
 - Maintain historical data to build models
- Flexible tools to access data are critical – it is YOUR data after all – Not IT, and not your vendor



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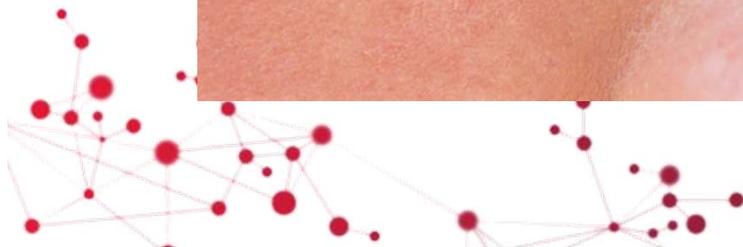


Opportunities for Analytics are Everywhere

- Customer Service
- Collections
- Audit
- Filing Enforcement/Tax Discovery
- Fraud Detection
- Strategic Planning



Any questions?



About the Presenter

ISO 9001 Certified



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- *25 years of tax experience (18 in a tax agency)*
- *Former Tax Director*
- *Experience with enhancing collections, audit and tax accounting systems and business processes*
- *Team and agency-wide quality programs*

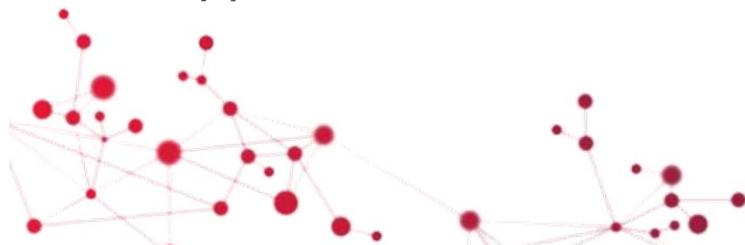
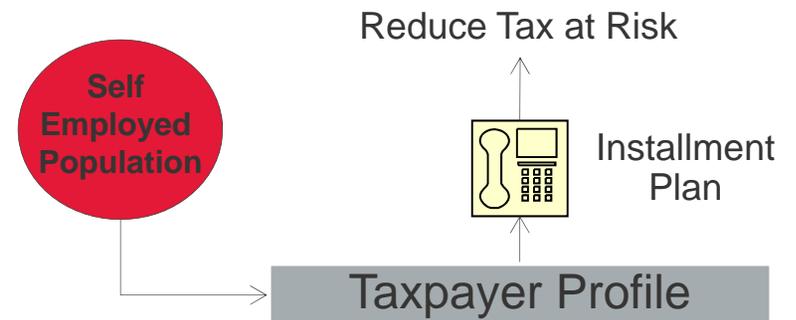
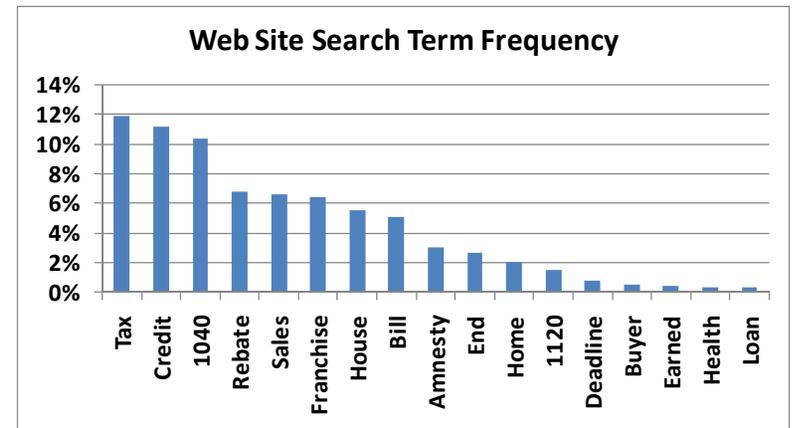


Appendix



Customer Service

- Which segment of the population will benefit from education/outreach?
- Which taxpayers could benefit from proactive education?
- Voluntary Compliance – What is the effect of changes to text on notices?
- Are taxpayers getting the right information?
- Are we updating our website based on usage statistics?
- Customer segments – Do certain customers react better to certain approaches/channels?



Collections

- Managing diverse debt portfolios requires **prioritization** of cases.

- How many and what type of scarce resources do I allocate?
- At what point in the collection lifecycle collected

Low Risk Case Strategy

Give them more time to Self-Cure before assigning them to a collector

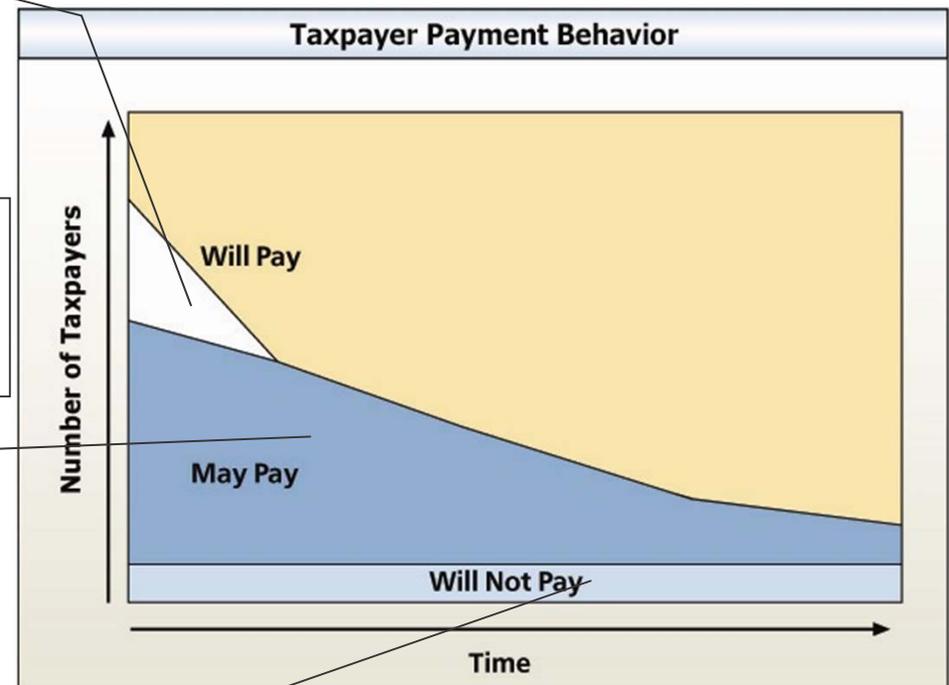
Medium Risk Case Strategy

Assign these cases earlier in the process, especially justified by the yield

- The answer depends on the perceived debtor **“risk”**
- Identify opportunities to reducing postage costs
 - “Bill often” can be expensive
 - Identify the right balance to maximize next revenues

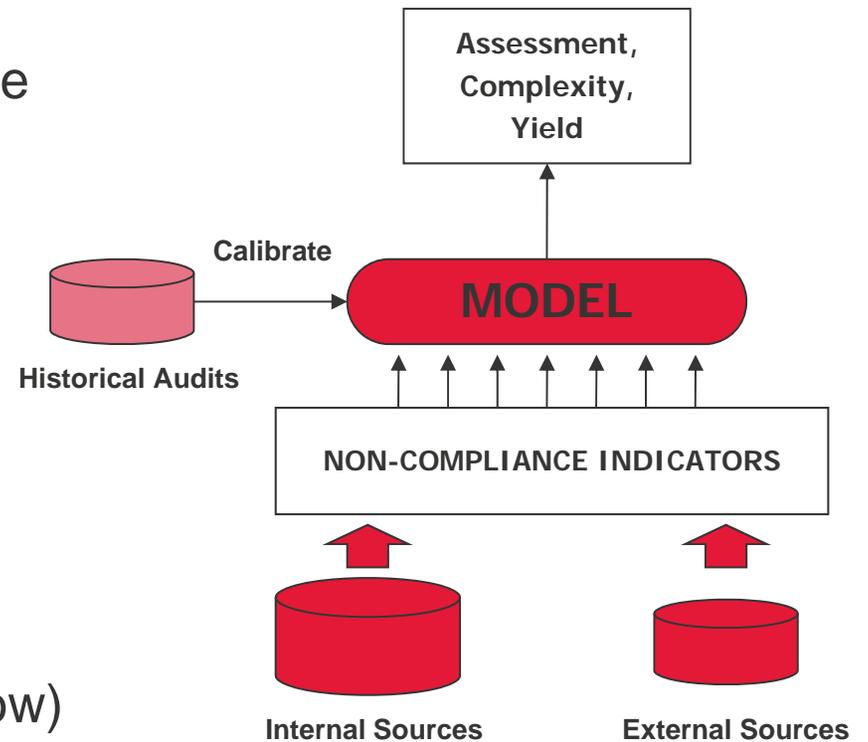
High Risk Case Strategy

Don't assign these to collectors unless balance amount requires it



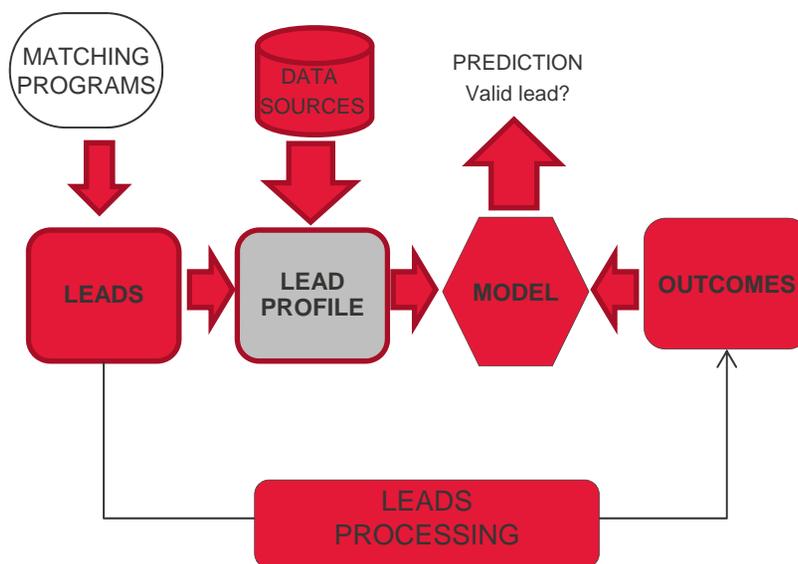
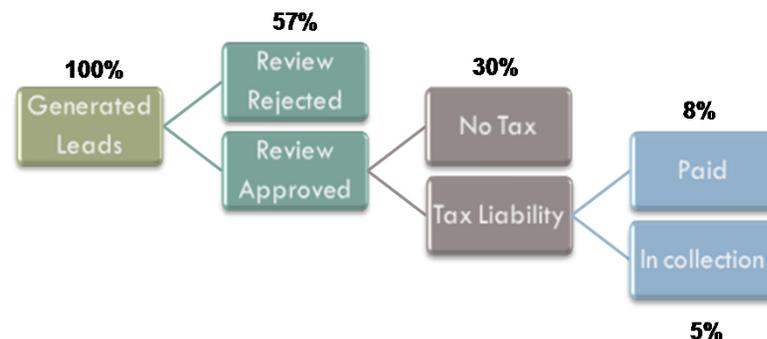
Audit

- There will always be more cases that can be selected than audit hours available
- The goal is to maximize the value of the audits: Compliance, Coverage and Revenues
- Models – if an audit is performed, what is the expected Revenue, Complexity and Yield
- Challenges
 - Modeling requires an initial sample of leads with outcome (you don't know what you don't know)
- Don't forget that change management may be more difficult than the technology



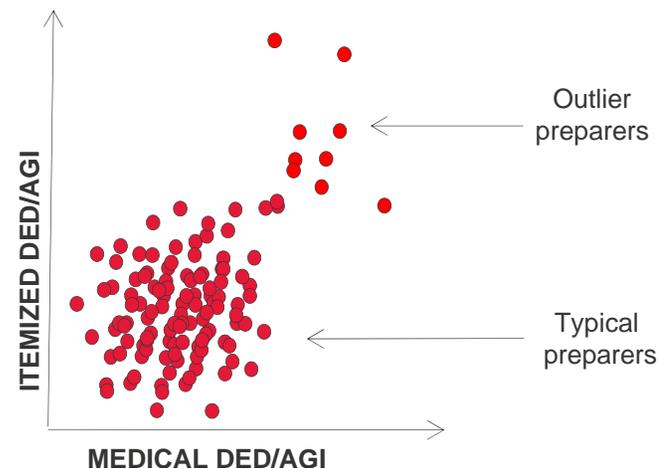
Filing Enforcement/Tax Discovery

- While Non-Filer programs generate significant revenue – they also generate
 - Large workloads
 - High false positive rates
- The goal is to maximize compliance
 - Maximum revenue
 - Minimum leads
 - Least impact on staffing



Fraud Detection

- Many types of fraud
 - W2 fraud, Preparer fraud, Refund Fraud, EITC Fraud
- Primary approaches
 - Rule Based - Identifying taxpayers with suspicious entries
 - Predictive Models - Matching taxpayers who statistically resemble known frauds
 - Outlier, Link Analysis – Identifying taxpayers/patterns that are dissimilar to the norm
- Must be done quickly (to not delay most refunds)
- Fraud schemes change rapidly



	RULE BASED	PREDICTIVE MODELS	OUTLIER BASED, LINK ANALYSIS
FRAUD TYPES	KNOWN & WELL DEFINED FRAUD	COMPLEX, KNOWN STATISTICAL PATTERNS	COMPLEX, UNKNOWN TYPES OF FRAUD
NEEDED	DOMAIN KNOWLEDGE	PAST PROCESSED LEADS	FILINGS DATA
STRENGTHS, WEAKNESSES	STATIC, CAN BE EVADED	NEEDS OUTCOME DATA	HARD TO VALIDATE

Strategic Planning

- Tax administrators make many strategic decisions
 - Staffing & budgets
 - Broad compliance/revenue enhancement initiatives
 - Taxpayer education and outreach initiatives
 - Technology and infrastructure investments
 - Study impact of new tax laws
- Analytics can provide insights that drive strategic decision making

