

Show Me the Money

Characterizing Spam-advertised Revenue

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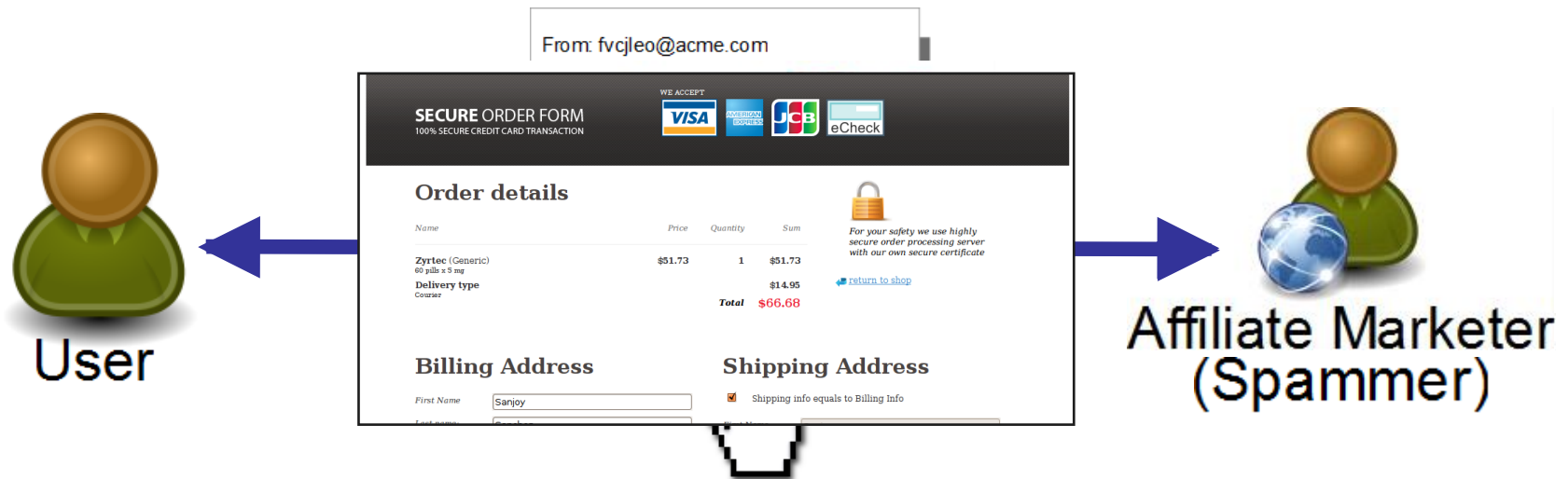
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Computer Science and Engineering

Spam Business Model

- Spam fundamentally **advertises** goods for sale
- **spammer revenue** = orders placed x revenue/order
- Goal: **Characterize** this revenue

how much and **from where**

Players in the Spam Economy





Добро пожаловать на RX-Promotion

RX-Promotion — партнерская программа, позволяющая участникам зарабатывать на продаже медикаментов там, где они хотят и так, как они хотят. Можно открыть собственную онлайн-аптеку или работать через нашу сеть.

Главное — это найти покупателя и продать медикаменты. Ну и, конечно, не забыть получить прибыль: вплоть **до 60% от сделки**. Считаете это предложение невыгодным? Что ж, остается вам только позавидовать.

Кстати, а сейчас мы разыгрываем [Золотой Слиток](#).



Тех.отдел

Общие вопросы
ICQ: 402961146
ICQ: 457098148

Тех. вопросы
ICQ: 50423090

[Еще ICQ](#)



Skype:
rx-promotion

РЕГИСТРАЦИЯ ▶

У нас отлично:



— Конкурсы? Ну и что?
— Действительно, ну и что, подумаешь, Харлей выиграть.

**КОМИССИЯ
ДО 60%
ПО РЕФЕРАЛАМ
ДО 15%**



Движок заточенный под SEO



RCE

30-60%
commission
on sales

On-demand
payment

Low
drug
prices

Run your
own shop



ХОТИТЕ
СВОЙ МАГАЗИН?
— ПОЖАЛУЙСТА!

Возможность открыть свой магазин

Хотите открыть свою онлайн-аптеку? Мы вас поддерживаем, ведь собственный магазин дает более широкие возможности для привлечения посетителей, работы с потенциальными клиентами и поиска оригинального пути развития бизнеса. Поэтому мы предлагаем разместить ваш сайт на бесплатном хостинге RX-Promotion и получить приятный подарок — доменное имя. Впрочем, вы можете выбрать любой хостинг, который вам подходит.

случае, это будет ваша стратегия продаж.

Studying affiliate programs

Oakland 2011 Click Trajectories study:

- 969 Million spam emails analyzed
- Identified all pharma, replica, software sites
- Mapped sites to affiliate programs
- Made multiple purchases per program
- Showed relationship between affiliate programs and banks

**Levchenko et al. Click Trajectories: End-to-End Analysis of the Spam Value Chain
IEEE Security and Privacy 2011**

Customer Service

- Customer service email includes order ID#

The image shows a screenshot of a customer service email and a website interface. The email is from support@drugs-support-24.com to gheart and ck2171, dated Jan 11. The website is THEUSDRUG.COM, featuring a navigation menu, a search bar, and a product listing for Viagra, Cialis, and Female Viagra. The email text includes: "Dear Customer, your order was processed. The status of your order is 'Sent to Warehouse...'", "We have successfully checked all your data and prepared your order for the shipment...", "The transaction ID is 553809", "Your Order ID is 496427", "You have purchased the following products at <http://the-us-drugs.com/> :", "VPXL 1 bottle x 1 pc , qty: 1, amount: 37.99 USD", and "Total amount of your order is: 52.99 USD (with shipping)".

support@drugs-support-24.com to gheart [show details](#) Jan 11 Reply

support@drugs-support-24.com to ck2171 [show details](#) Jan 11 Reply

Dear Customer, your order was processed. The status of your order is "Sent to Warehouse..."

support@rx-drugs-support.com to ghasrxp [show details](#) Feb 8

Dear Customer, your order was processed. The status of your order is "Sent to Warehouse..."

We have successfully checked all your data and prepared your order for the shipment...

The transaction ID is 553809
Your Order ID is 496427
You have purchased the following products at <http://the-us-drugs.com/> :

VPXL 1 bottle x 1 pc , qty: 1, amount: 37.99 USD

Total amount of your order is: 52.99 USD (with shipping)

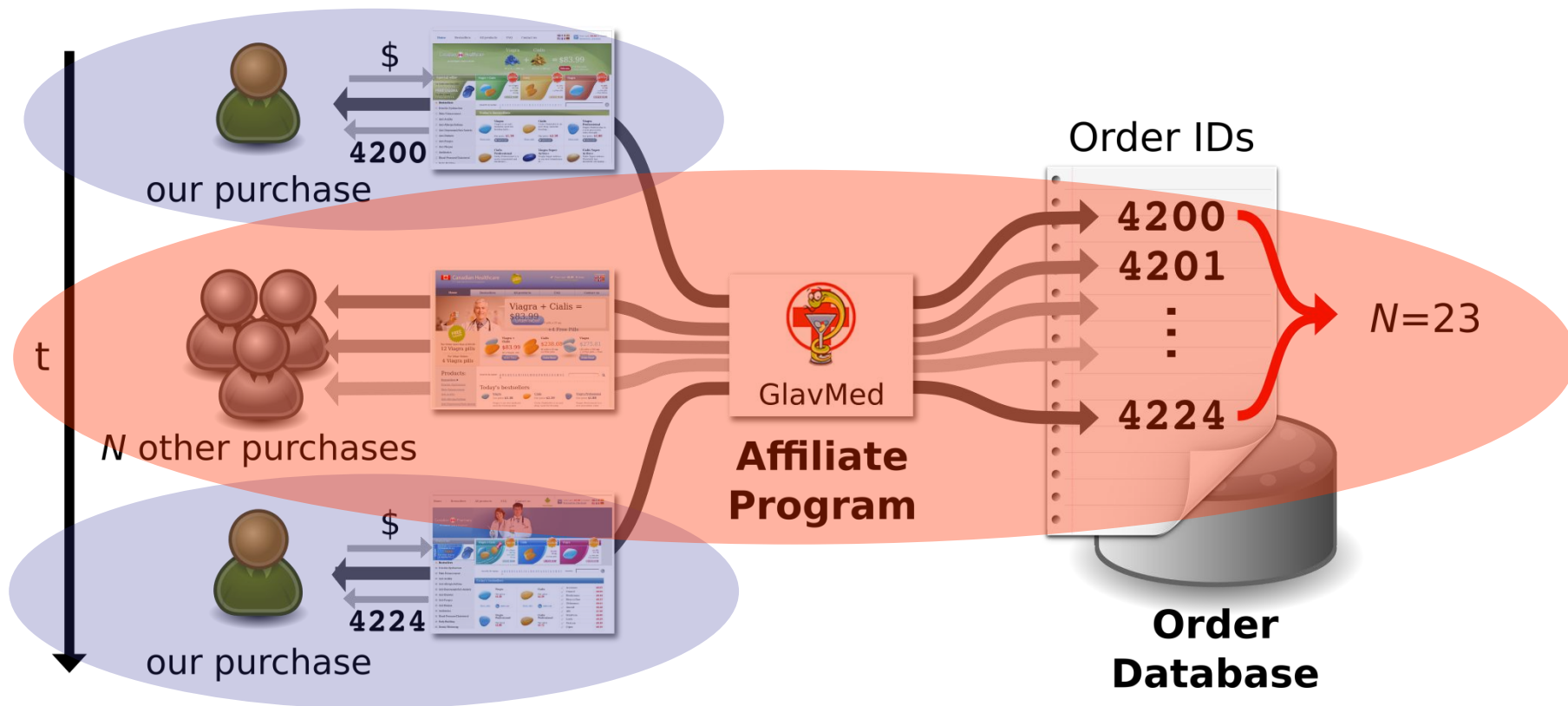
482065, 483939, 496427 !

Sequential Update Hypothesis

Each affiliate program has a single global counter implementing order number.

When ordering from an individual Affiliate Program, order numbers are sequentially updated for each new order.

Order Throughput Inference



Affiliate Program coverage



66% of pharma spam

97% of downloadable software spam

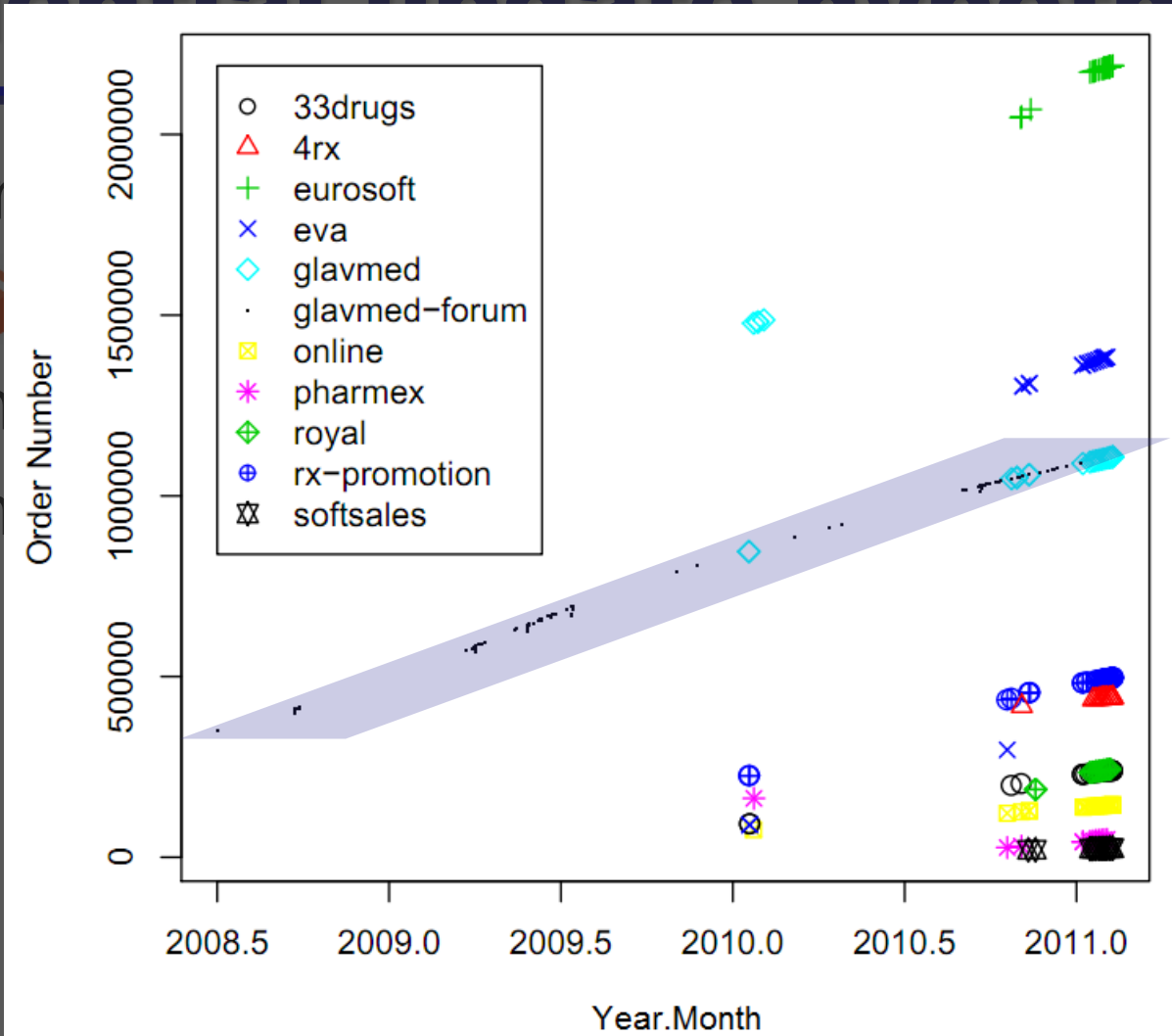
Dataset



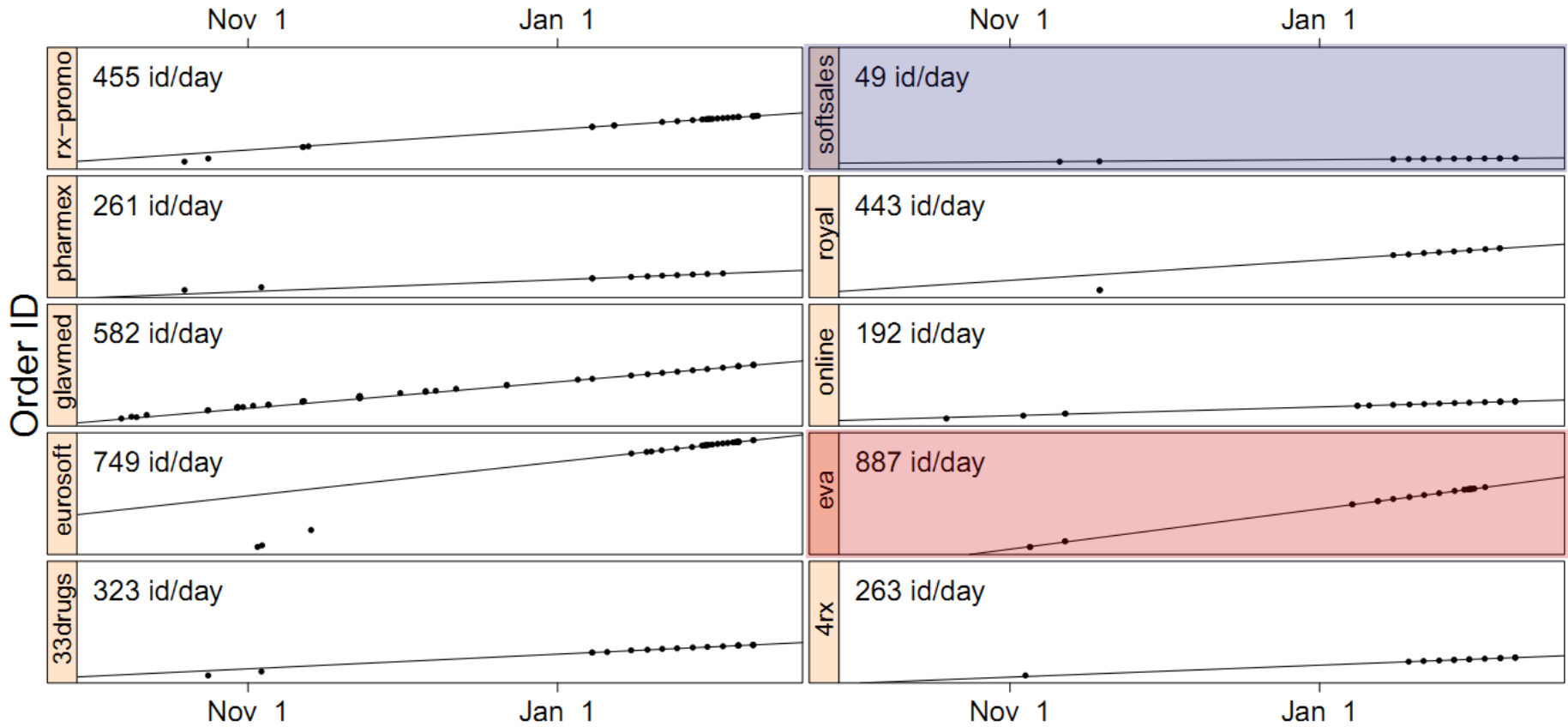
156 orders over 2 months

Validating sequential update hypothesis

- Start
- Con
- Con
- Tim



Order Throughput Inference



From orders to revenue

Revenue = # orders x average order price

- Order completion rate
- How many of each drug are ordered
- Which drugs are ordered
 - Prior order estimates [Kanich et al., CCS 2008]
 - Absolute minimum cost item
 - Observed item distribution

From orders to revenue

Affiliate Program	orders/month	Basket-weighted average single order	rev/month
33drugs	9,862	\$57.25	\$560,000
4RX	8,001	\$95.00	\$760,000
EuroSoft	22,776	\$84.50	\$1,900,000
EvaPharmacy	26,962	\$90.00	\$2,400,000
GlavMed	17,933	\$57.00	\$1,000,000
Online Pharmacy	5,856	\$58.00	\$340,000
Pharmacy Express	7,933	\$58.75	\$460,000
Royal Software	13,483	\$133.75	\$1,800,000
Rx-Promotion	6,924	\$57.25	\$400,000
SoftSales	1,491	\$134.50	\$200,000

Consistent with Rx-Promotion CC processor data

Product demand

- Where are the customers?
- What drugs are desired?
- Ideally: full weblog data from Affilliate Program
- Can we infer this from available information?

Eva Pharmacy

Eva Pharmacy Affiliate

Compromised Image Hosters

Us

IMG GETs

Browse

Click

Click

Click



Landing Page

Product Page

Cart Page



Checkout

752,000 distinct visitor IPs
3,089 distinct cart additions

Everybody Visits .buy



**75% of all customers in US
91% in Western Countries**

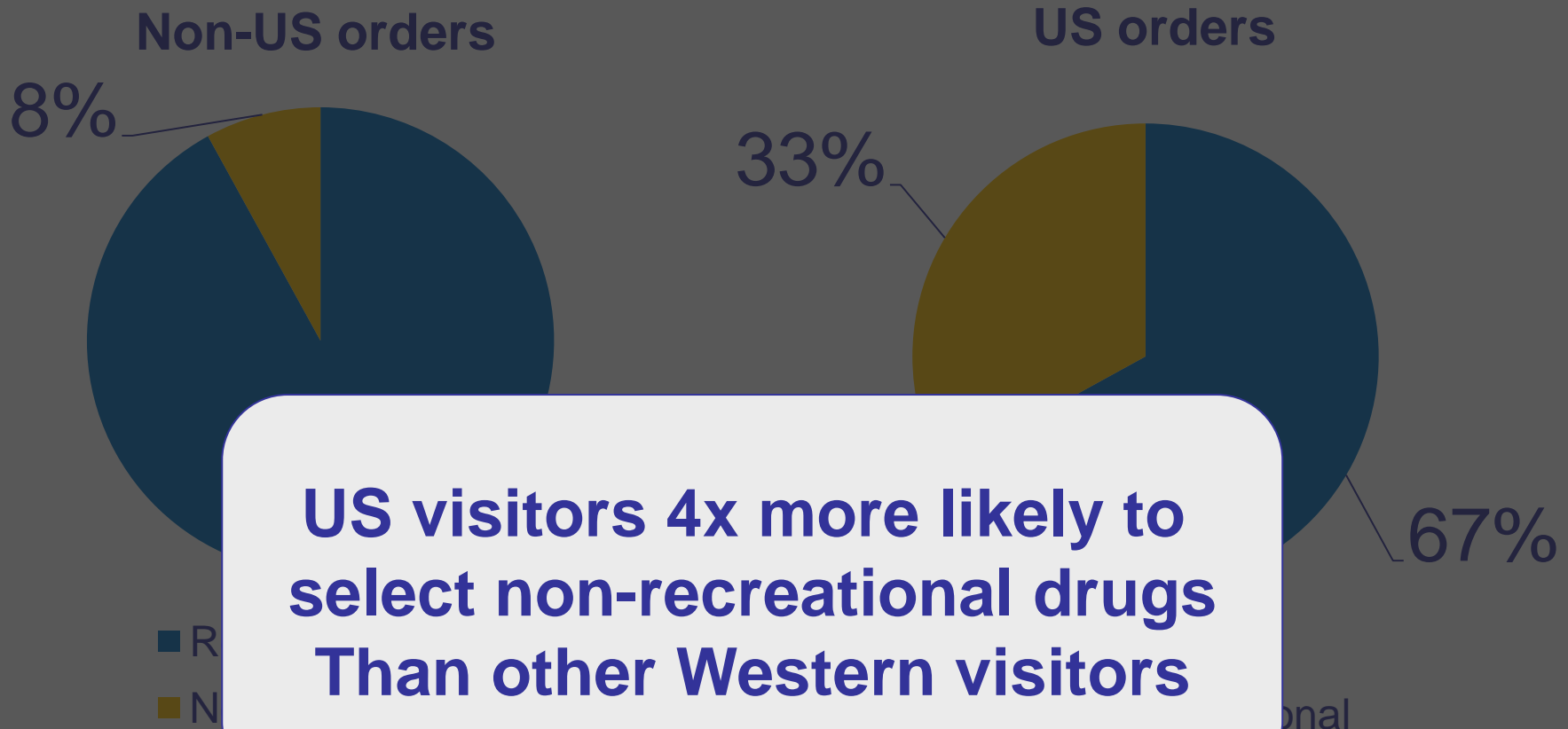
Basket Inference

Category	Quantity
Men's Health	1760
Pain Relief	232
Women's Health	183
General Health	135
Antibiotics	134
Antidepressants	95
Weight Loss	92
Allergy & Asthma	85
Heart & Blood Pressure	72
Skin Care	54
Stomach	41
Mental Health & Epilepsy	33
Anxiety & Sleep Aids	33
Diabetes	22
Smoking Cessation	22
Vitamins and Herbal Supplements	18
Eye Care	15
Anti-Viral	14

71% "recreational"

**29% non-recreational
pharmaceuticals**

Order composition



Conclusions

- Order throughput estimates for 10 major spam-advertised affiliate programs
- Whole-program revenue estimates
 - \$200K-\$1.5M/month per program; \$9.8M/month total
- Location-based demand measurements
 - Western purchases dominate demand
 - US customers four times as likely to select non-recreational pharmaceuticals

Thank You!



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