

# Cops and Robbers - Las Vegas Style

(And Other Stuff I Think About)

# Background

- 1983: Founded Systems Research & Development (SRD)
- 1992: Assisted Vegas casinos in detecting the subjects of interest - resulting in a technology known as Non-Obvious Relationship Awareness (NORA)
- 1996: Created an identity-centric customer repository based on 4,200 disparate systems ... >100 million resolved identities
- 2001/2003: Funded by In-Q-Tel, the CIA's venture capital arm
- 2003: Demoted self, hired a CEO
- 2005: SRD acquired by IBM, now Chief Scientist, IBM Entity Analytics
- Today: Focus is in the area of 'sensemaking on streams' with special attention towards privacy and civil liberties protections

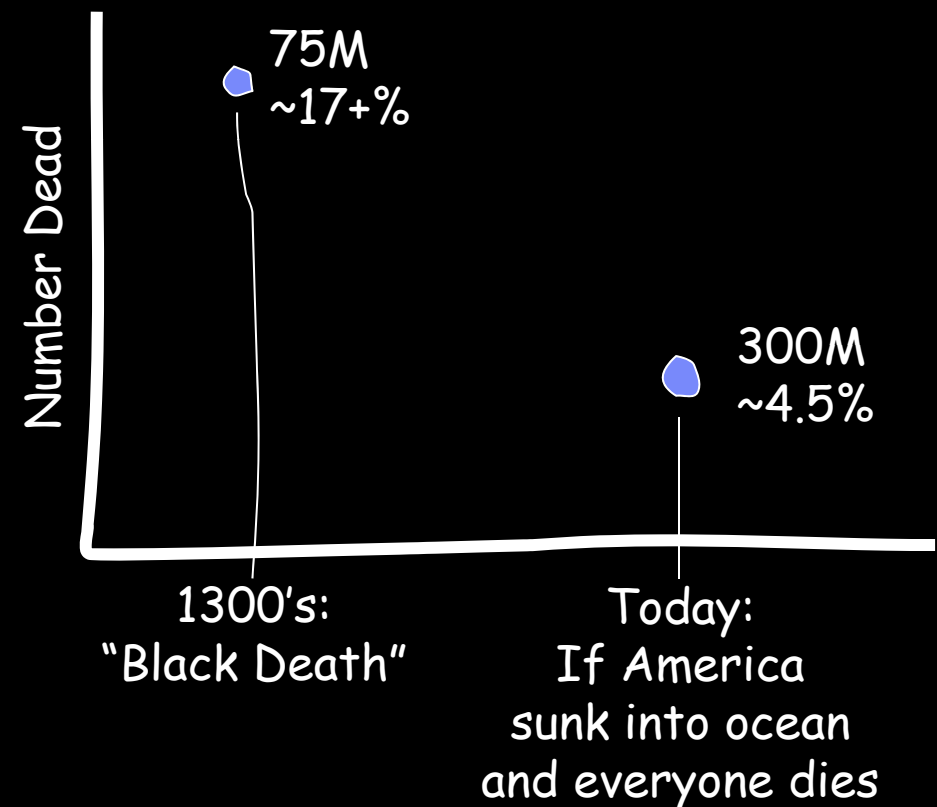
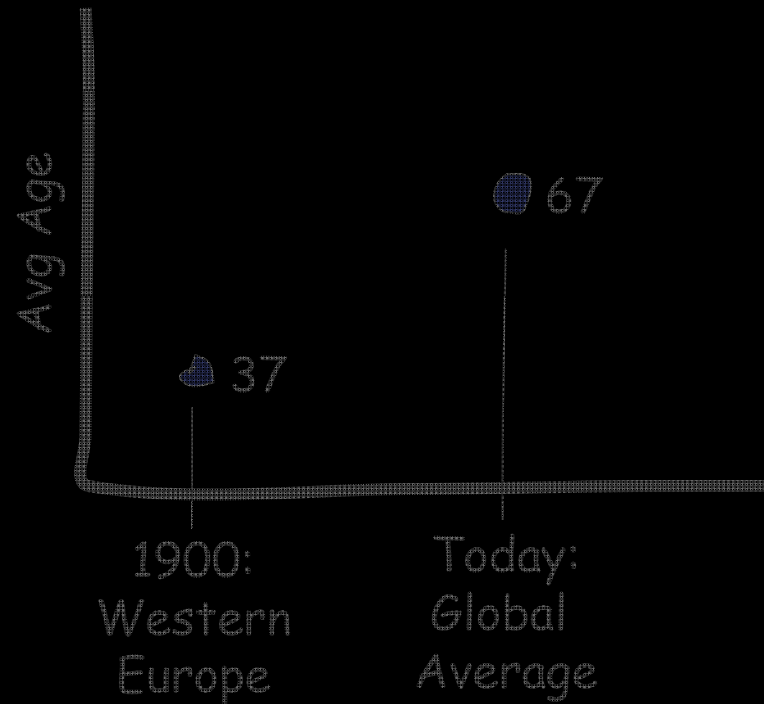
# Macro Trends

# Web 2.0

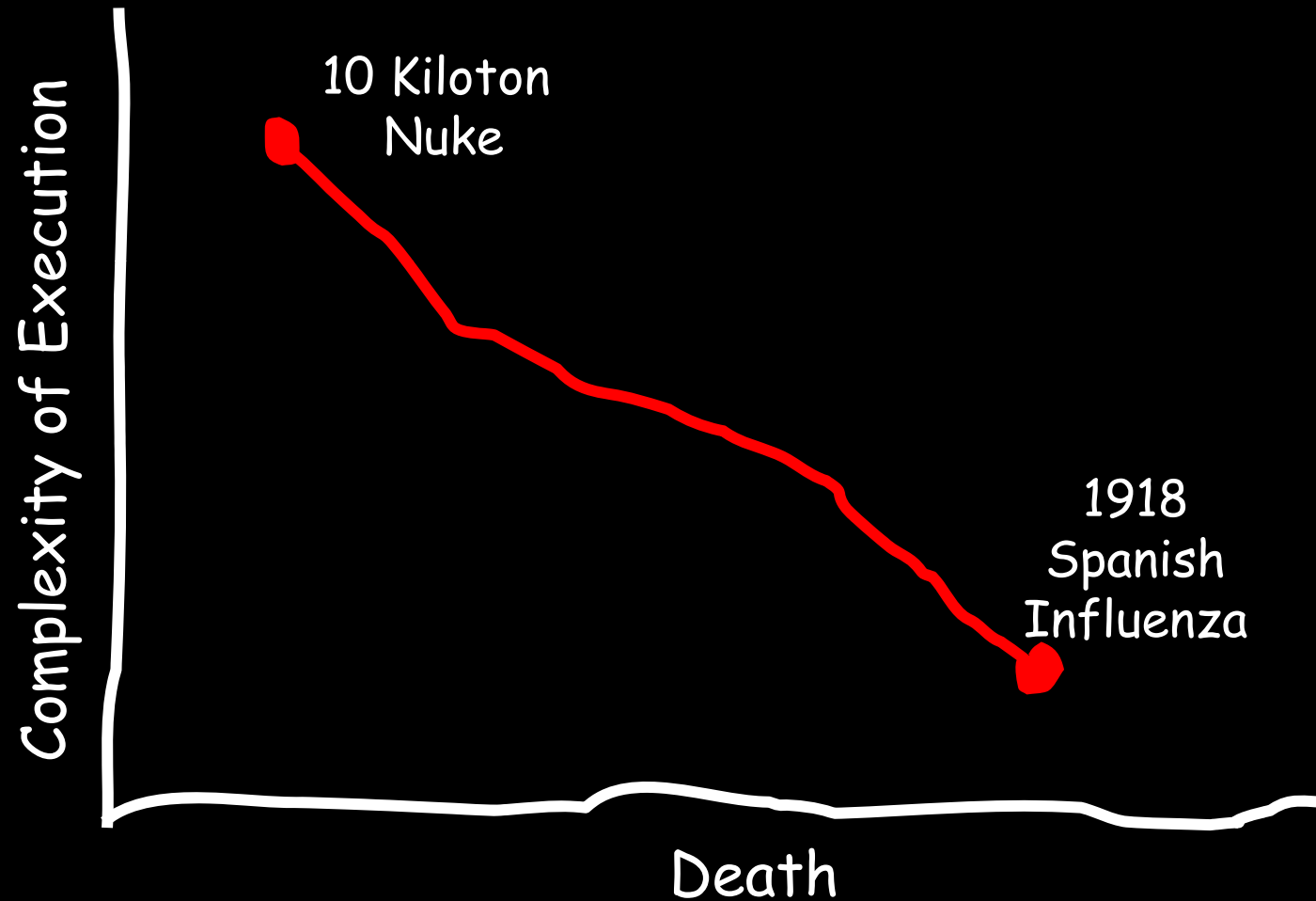


<http://web.archive.org/web/20070621234750/www.e-sheep.com/spiders/02/index.html>

# Good News: The World is Not More Dangerous



# "More Death Cheaper in Future" Graph



# 1918 Spanish Influenza Genome

1918 PB2 (Segment 1)

M E R I K E L R D L M S Q S R T R E I L T K T T V D H M A I-30  
 28-ATGGAAGAATAAAAGAACTAAGGGATCTAATGTCGCAGTCTCGCACTCGCGAGATACTCACAAAACCACCGTGGACCATATGGCCATA-117

I K K Y T S G R Q E K N P A L R M K W M M A M K Y P I T A D-60  
 ATCAAGAAGTACACATCAGGAAGACAGGAGAAGAACCCCGCACTTAGGATGAAATGGATGATGGCAATGAAATATCCAATTACAGCAGAC-207

K R I M E M I P E R N E Q G Q T L W S K T N D A G S D R V M-90  
 AAGAGATAATGGAAATGATTCTGAGAGAAATGAGCAAGGACAACTCTATGGAGTAAAACGAACGATGCCGGATCAGACCGAGTGATG-297

V S P L A V T W W N R N G P T T S A V H Y P K I Y K T Y F E-120  
 GTATCACCTCTGGCTGTGACATGGTGAATAGGAATGGACCAACGACAAGTGCAGTTCCTATCCAAAATCTACAAAACCTATTTTGAA-387

K V E R L K H G T F G P V H F R N Q V K I R R R V D I N P G-150  
 AAAGTCGAAAGTTAAAACATGGAACCTTTGGCCCTGTCCATTTTCAGAAACCAAGTCAAATACGTCGAAGAGTTGACATAAATCCTGGT-477

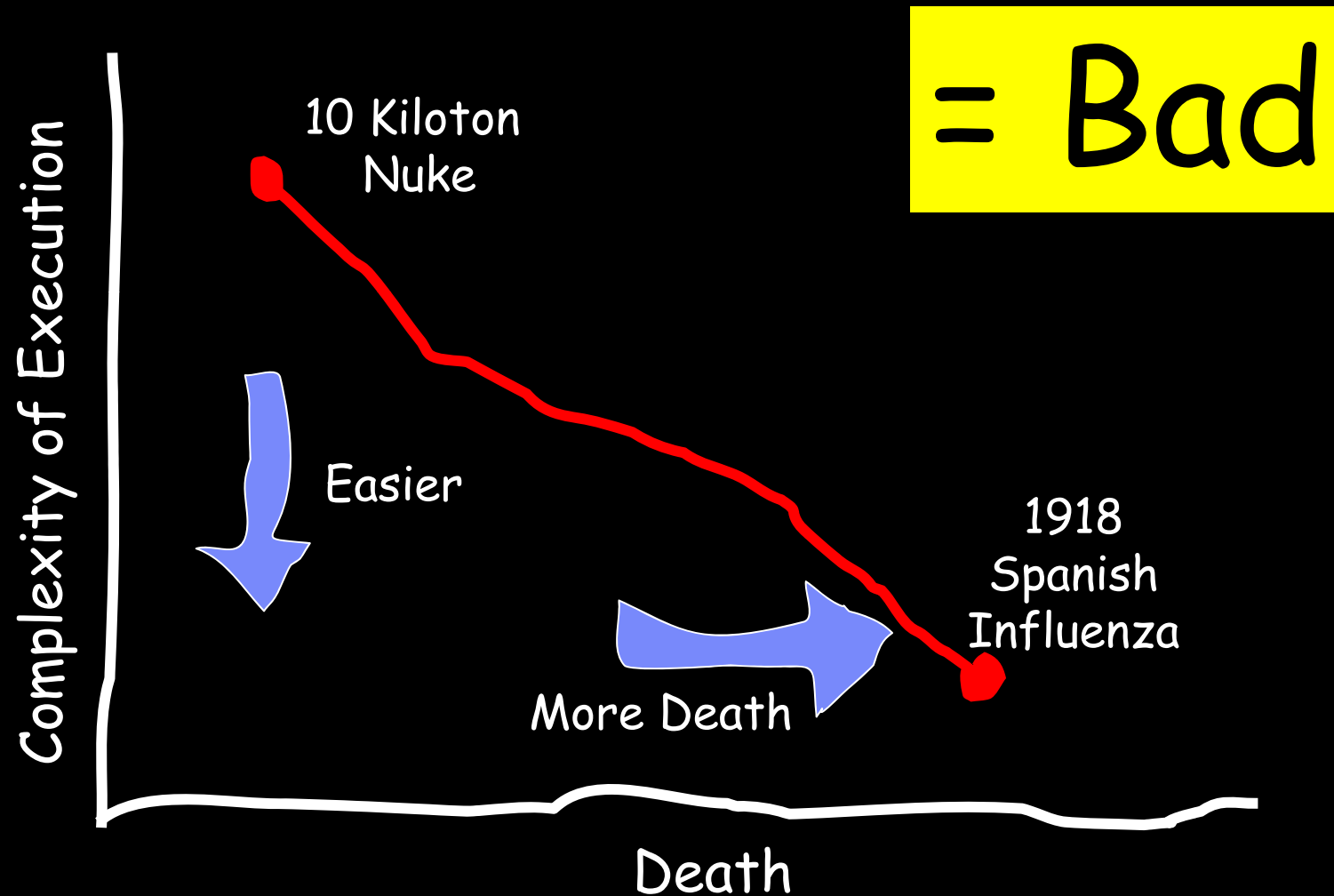
H A D L S A K E A Q D V I M E V V F P N E V G A R I L T S E-180  
 CATGCAGATCTCAGTGCCAAAGAGGCACAGGATGTAATCATGGAAGTTGTTTTCCCAAACGAAGTGGGAGCCAGGATACTAACATCGGAA-567

S Q L T I T K E K K E E L Q D C K I S P L M V A Y M L E R E-210  
 TCGCAACTGACAATAACCAAAGAAAAGAAAGAAGAACTCCAAGATTGTAAAATTTCTCCTTTAATGGTGGCATAACATGTTGGAGAGAGAA-657

L V R K T R F L P V A G G T S S V Y I E V L H L T Q G T C W-240  
 CTGGTCCGAAAACAAGATTCCTCCAGTGGCTGGTGGGACAAGCAGTGTGTATATTGAAGTGTGCATTTGACTCAAGGAACATGCTGG-747

F Q M Y T P G G E V R N D D V D Q S L I I A A R N I V R R A-270

# "More Death Cheaper in Future" Graph

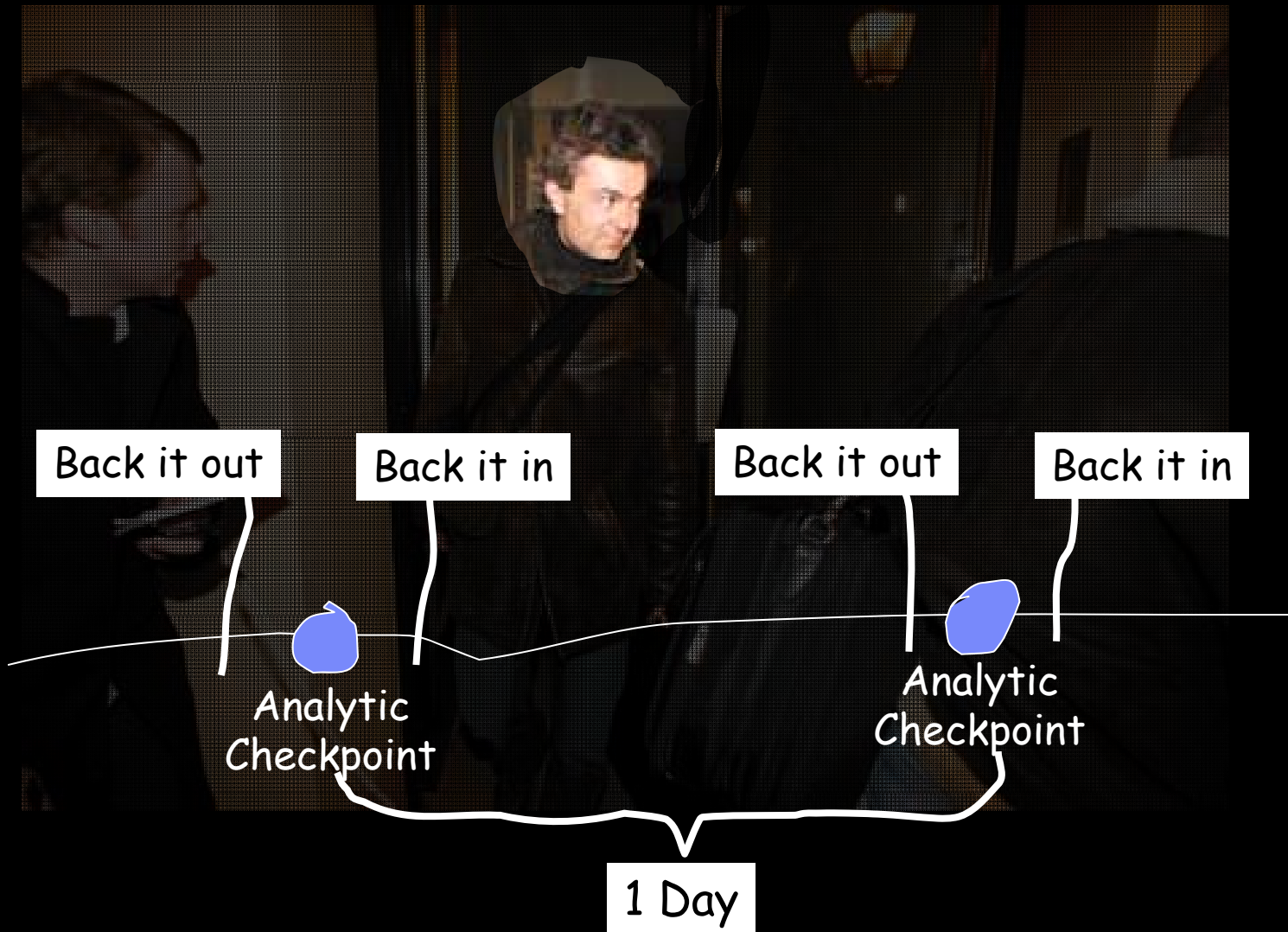


# Jerome Kerviel - US\$7B

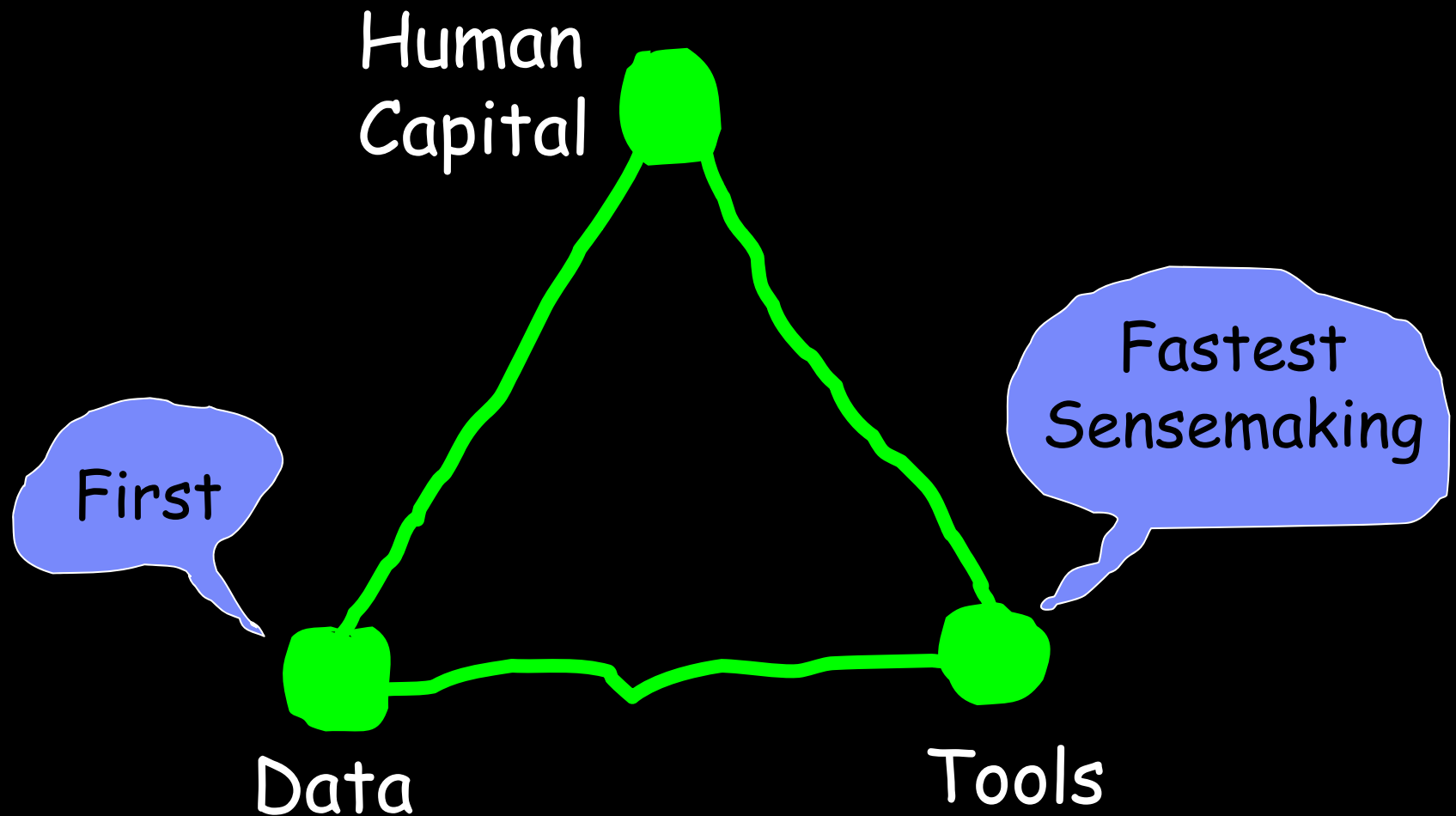


[www.chinapost.com.tw/news\\_images/20080127/p1d.jpg](http://www.chinapost.com.tw/news_images/20080127/p1d.jpg)

# Jerome Kerviel - US\$7B



# Domains for Competitive Advantage



"Every millisecond gained in our program trading applications is worth \$100 million a year."

*Goldman Sachs, 2007 \* Source Automated Trader Magazine 2007*

Las Vegas:  
An Ideal Laboratory

## Fact or Fiction?

- Does the Bellagio Hotel and Casino really have a "vault" as depicted in movie *Ocean's 11*?
- Have casinos specifically targeted x-felons for employment?
- Do casinos perform background checks of guests against public records?
- Is facial recognition technology being used to monitor the doors for the early detection of cheaters?
- Is there a gaming related watch list you can put yourself on ... but not cannot take yourself off?
- Does the gaming industry offer assistance in the creation of false identities and cover stories?

## Las Vegas: Stats

- Fastest growing city in the United States
- 38 million visitors a year
- 18 of the 20 largest hotels in the world
- A mega-resort can support in excess of 100,000 customers a day
- Each resort contains 100+ system and with 20,000+ sensors (data collection points)
- Lateral information sharing to enhance prediction (known cheaters, credit worthiness, etc.)

## The Las Vegas Lab

- False identities
- Distant recruiting
- Internet-based sharing of vulnerabilities and tradecraft (inc. device production)
- Recruitment of trusted entities
- Insider threats are highest risk

## The Scams ...

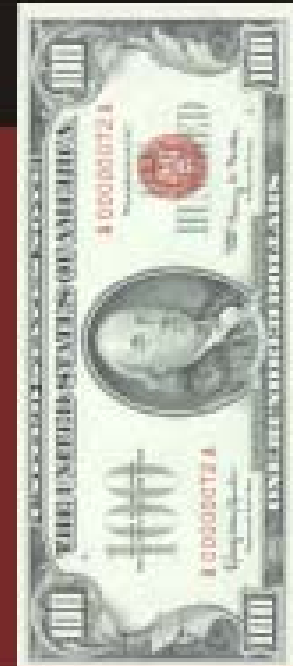
- Cheaters
- Advantage players (*e.g.*, card counters)
- Insider threats/collusion
- Money laundering
- Credit and check fraud
- Insurance scams (*e.g.*, slip and falls)
- Armed cage takeovers
- Executive kidnapping

# Cheating Las Vegas

# Hardware Vulnerabilities

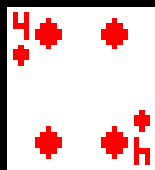


Credit  
100

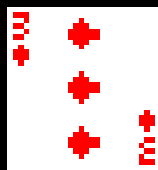


# Card Counting "101"

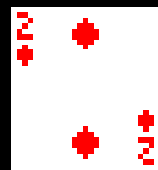
<u>Card Value</u>	<u>Math</u>
2 - 6	+1
7 - 9	0
10, J, Q, K & Ace	-1



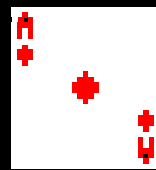
+1



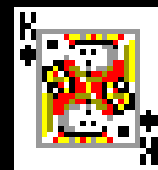
+1



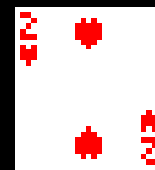
+1



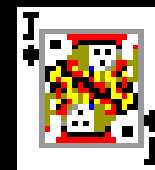
-1



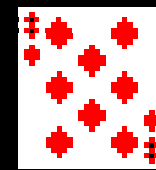
-1



+1



-1



0

# Card Counting Bet Variation

Count  
-2



Count  
+1



Count  
+4



Count  
+6



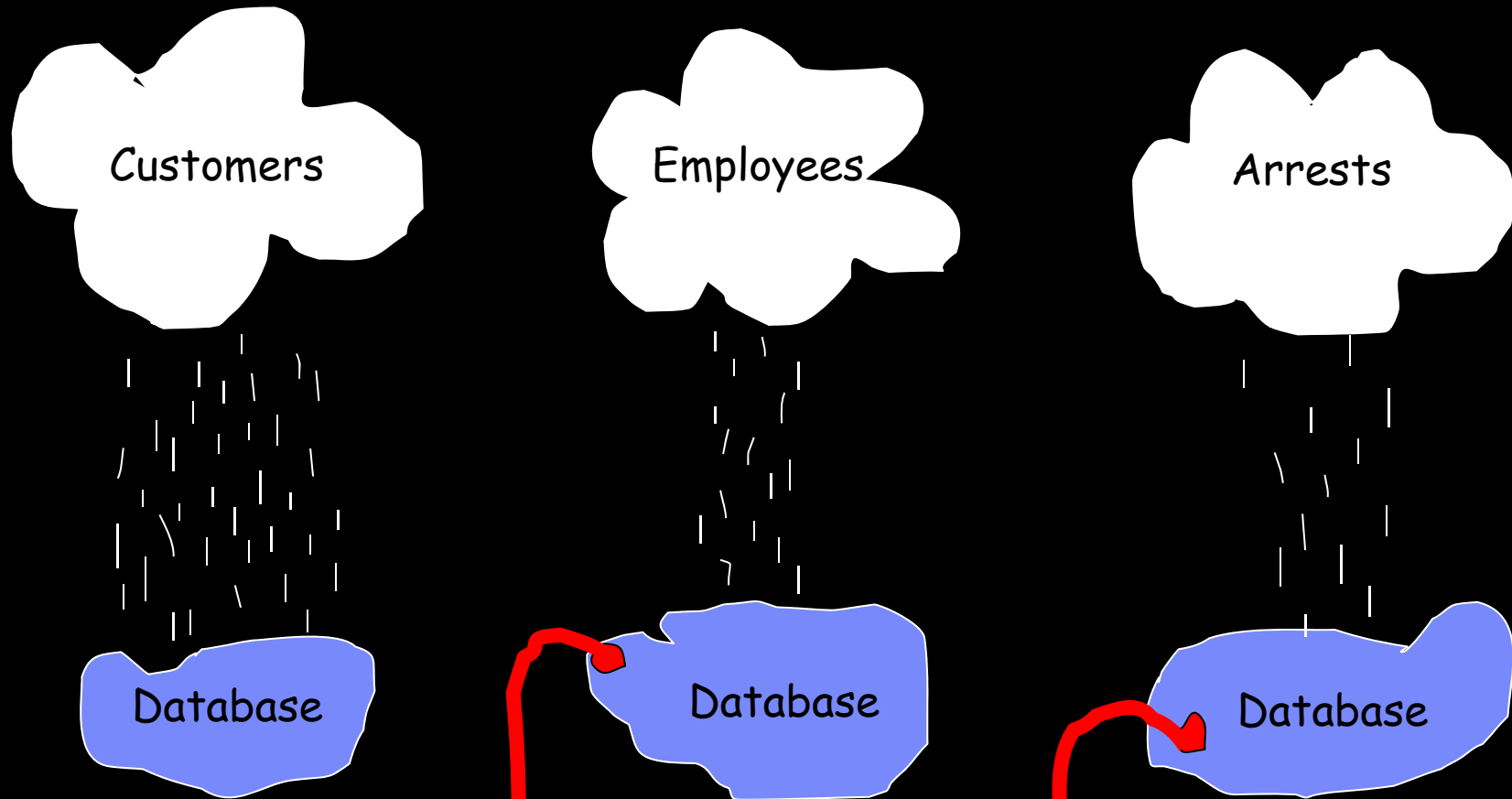
# Count Teams



## Other Hacks

- Card bending
- Card daubing/marking
- Concealed card counting devices
- Video poker Royal Flush generator
- Keno random number defect
- Real-time roulette physics for prediction
- Traffic analysis of roulette wheel bias
- Shuffle tracking
- Manufactured marked cards
- Poker teams
- Rigged poker game

# Information in Isolation

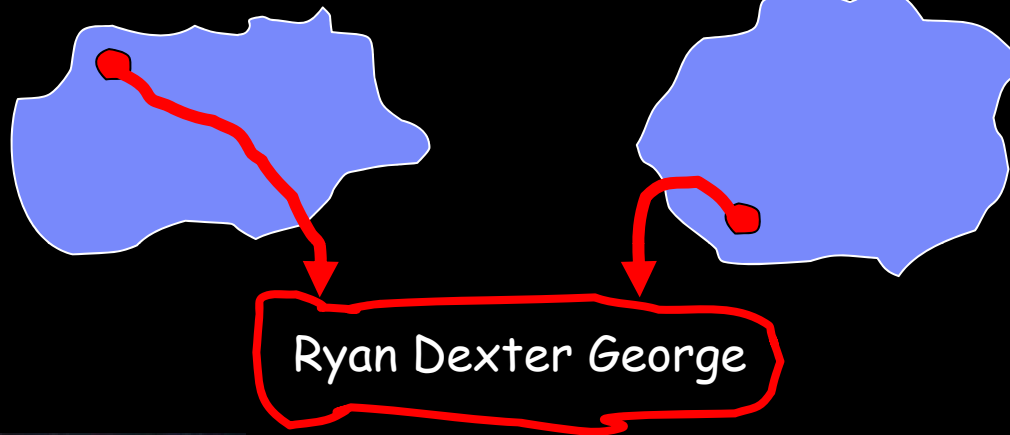


The newly hired employee had previously been arrested for stealing from you ... same store!

# And Sometimes Tragic

Foster Parent Applicant

Violent Criminals



Sherry Charlie - She died less than one month after being placed in the home of Ryan Dexter George.

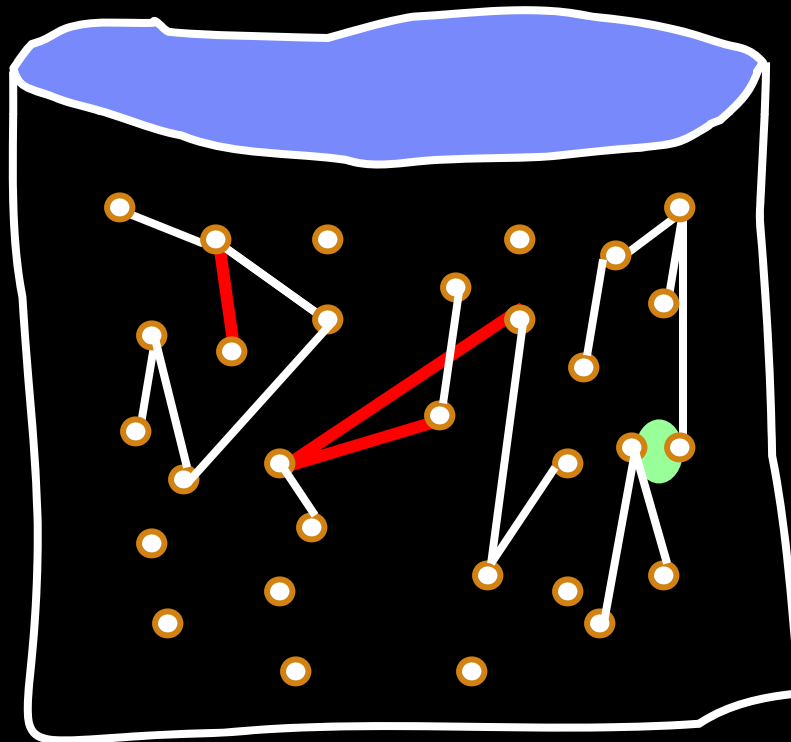
# Who is Who? Who is Related to Who?

## Good Guys

Customers  
Prospects  
Employees  
Vendors  
Victims

## Subjects of Interest

Exclusionary List  
Federally Banned  
Gaming Felons  
Card Counters



# Case Study: Las Vegas Casino

## Data Sources

- 20,000 plus employees
- All vendors
- All slot club & table games-related players
- In-house arrests/incidents
- Known cheaters

## Detected Relationships

- 24 active players were known cheaters
- 23 players had relationships to prior arrests/incidents
- 12 employees were themselves the player
- 192 employees had possible vendor relationships
- 7 employees were the vendor



# Case Study: US Federal Agency

## Data Sources

- 20,000 plus employees
- 75,000 plus vendors
- 200,000 plus Type 1 security risk entities
- 200,000 plus Type 2 security risk entities

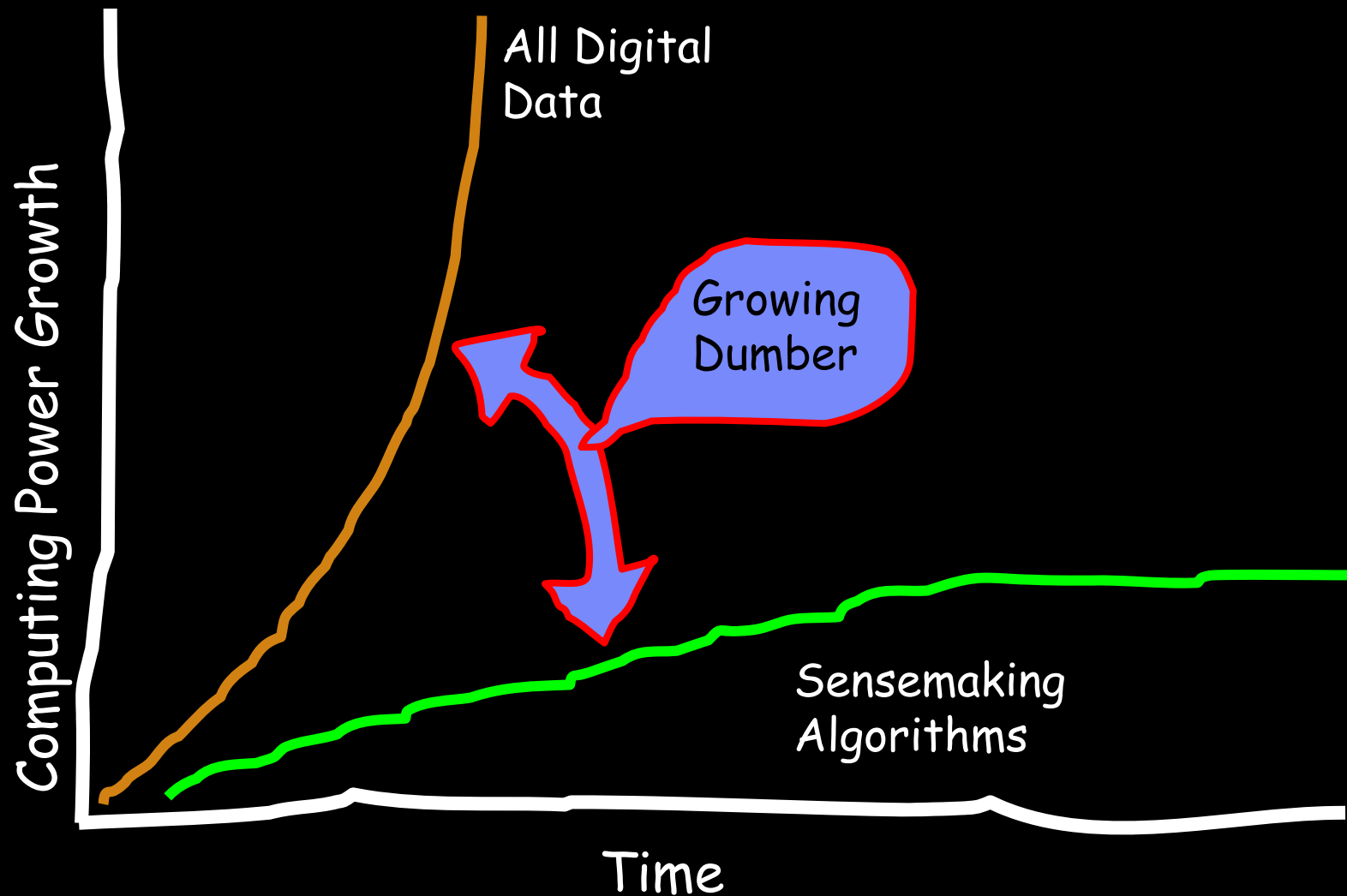
## Detected Relationships

- 140 employee relationships to vendors
- 1451 potential vendor relationships to security risks
- 253 employee relationships to security risk entities
- 2 vendors were the security risk
- "n" employees were the security risk/vendor



In Closing

# Trend: Organizations are Getting Dumber



# The Way Forward



## Related Blog Posts

[Puzzling: How Observations Are Accumulated Into Context](#)

[The Fast Last Puzzle Piece](#)




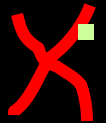


[Context: A Must-Have and Thoughts on Getting Some ...](#)

[Algorithms At Dead-End: Cannot Squeeze Knowledge Out Of  
A Pixel](#)

[How to Use a Glue Gun to Catch a Liar](#)

[It Turns Out Both Bad Data and a Teaspoon of Dirt May Be  
Good For You](#)

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Blogging At:

[www.JeffJonas.TypePad.com](http://www.JeffJonas.TypePad.com)

Information Management

Privacy

National Security

and Triathlons

Questions?

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