



# Oversight

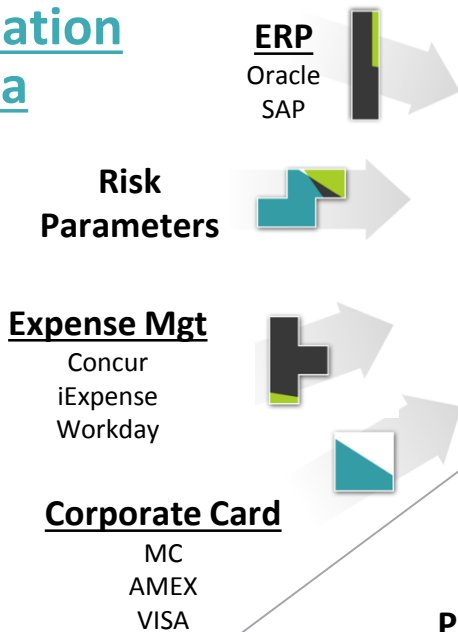
## Insights On Demand

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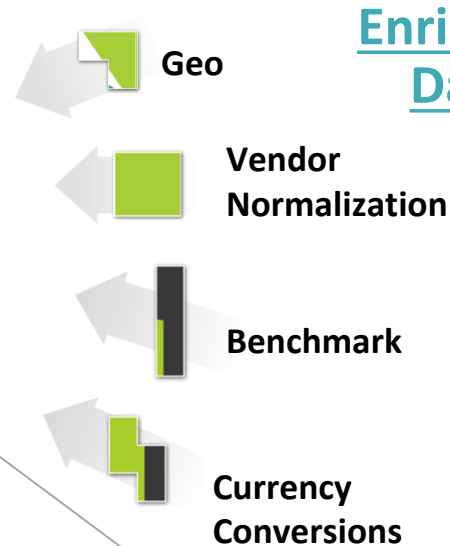
1

# Curating Data – 60% Effort in Analytic Projects

## Organization Data



## Enriching Data



PEP

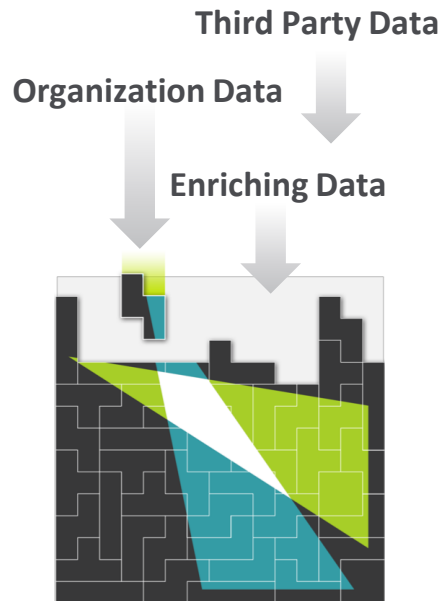
DOW Jones

CPI

## Third Party Data

# Accurate Analysis through Artificial Intelligence

## Acquire



## Analyze

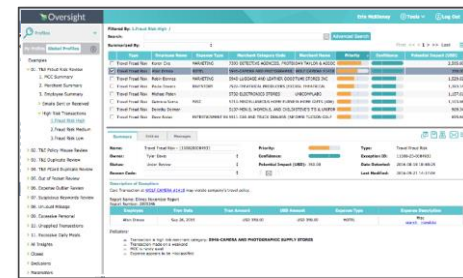


## Resolve

### Dashboard



### Workbench



# 3 Integrated Analytics Workbench

**Oversight**

Filtered By: 1.Fraud Risk High /

Summary By: [Dropdown]

Type	Employee Name	Expense Type	Merchant Category Code	Merchant Name	Priority	Confidence	Potential Impact (USD)
Travel Fraud Risk	Karen Ora	MARKETING	7393-DETECTIVE AGENCIES, PHOTOGRAPHY & ASSOC	WOLF CAMERA #3118	High	100%	2,595.00
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**Engage non-Oversight users via email participation**

- Logical prioritization and presentation of cases
- Provides a case research workflow
- Documents steps taken to resolve cases
- Automates employee policy education

**PERMANENT AUDIT LOG**

Summary | Entities | Messages

Message Type: [Dropdown] | Sent: [Dropdown] | Received: [Dropdown] | Notes: [Dropdown] | Attachments: [Dropdown] | System: [Dropdown]

Message Type	Sent	Received	Notes	Attachments	System
2017-05-22 10:46:39	Escalator System	Escalator System	Escalation rule 'Email Sent' triggered.		
2017-05-22 10:46:35	Escalator System	Escalator System	Escalation rule 'Email Sent' triggered.		
2017-05-22 10:46:35	Escalator System	Escalator System	Escalation rule 'Email Sent' triggered.		
2017-05-22 10:46:35	Escalator System	Escalator System	Escalation rule 'Email Sent' triggered.		
2017-05-22 10:46:35	Escalator System	Escalator System	Escalation rule 'Email Sent' triggered.		

**New Notes**

Save | Attach File

**Expense Audit Policy Reminder (OST11703200000017:5645)**

Monday, May 22, 2017 at 10:46 AM  
To: Allen Dimas

Dear Allen Dimas,

Our Travel and Expense monitoring system has detected expense report activity submitted by you that fails to comply with our TAE policy.

In an effort to assist our employees in understanding (Company Name) travel and expense policy, we would like to provide you a link where you can view the policy (URL).

Direct any questions to (email address)

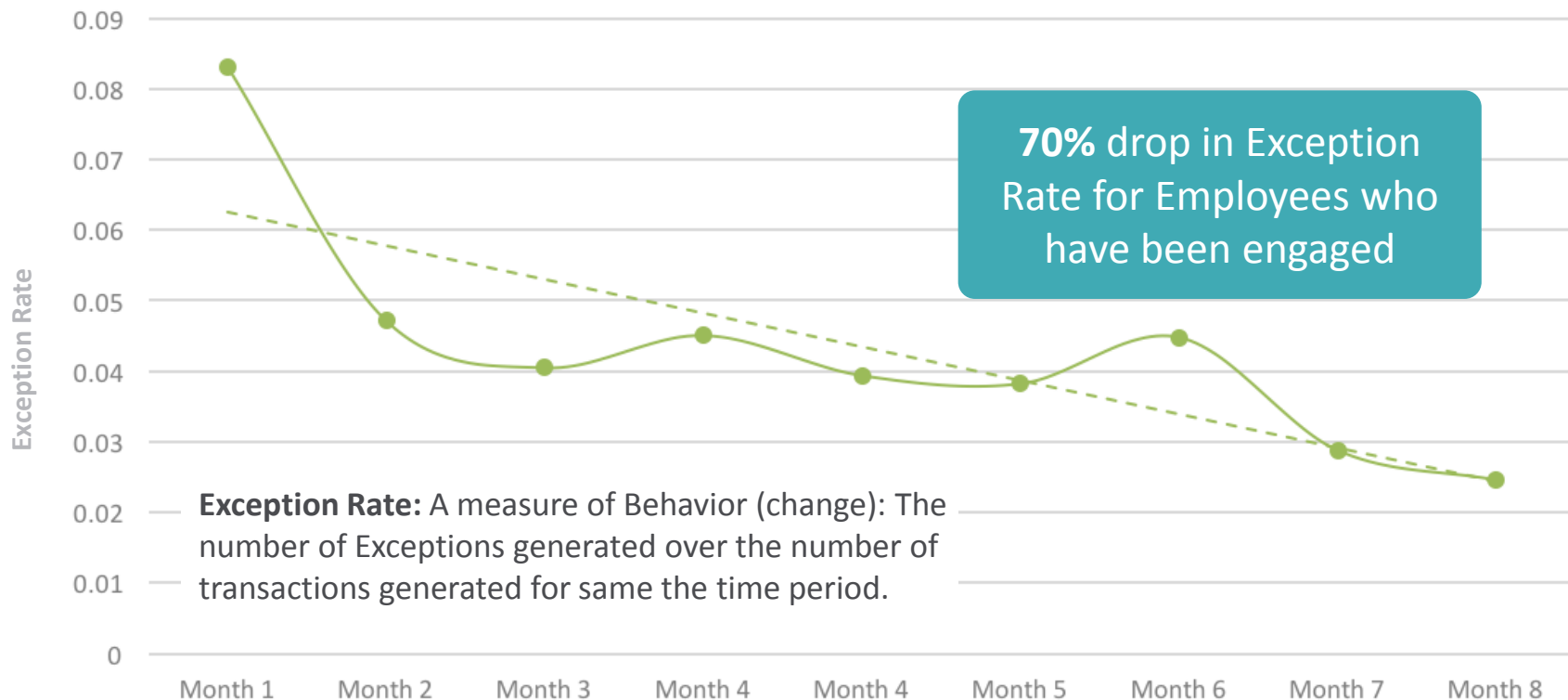
Details follow:

Report Name:	Dimas November Report
Report Number:	2899246
Employee:	Allen Dimas
Transaction Date:	2015-09-29 00:00:00
Transaction Amount:	350.00
Transaction Currency:	USD
Out of Pocket:	N
Merchant Name:	WOLF CAMERA #1418
Expense Type:	HOTEL
Expense Description:	Mac

Powered by Oversight Insights On Demand

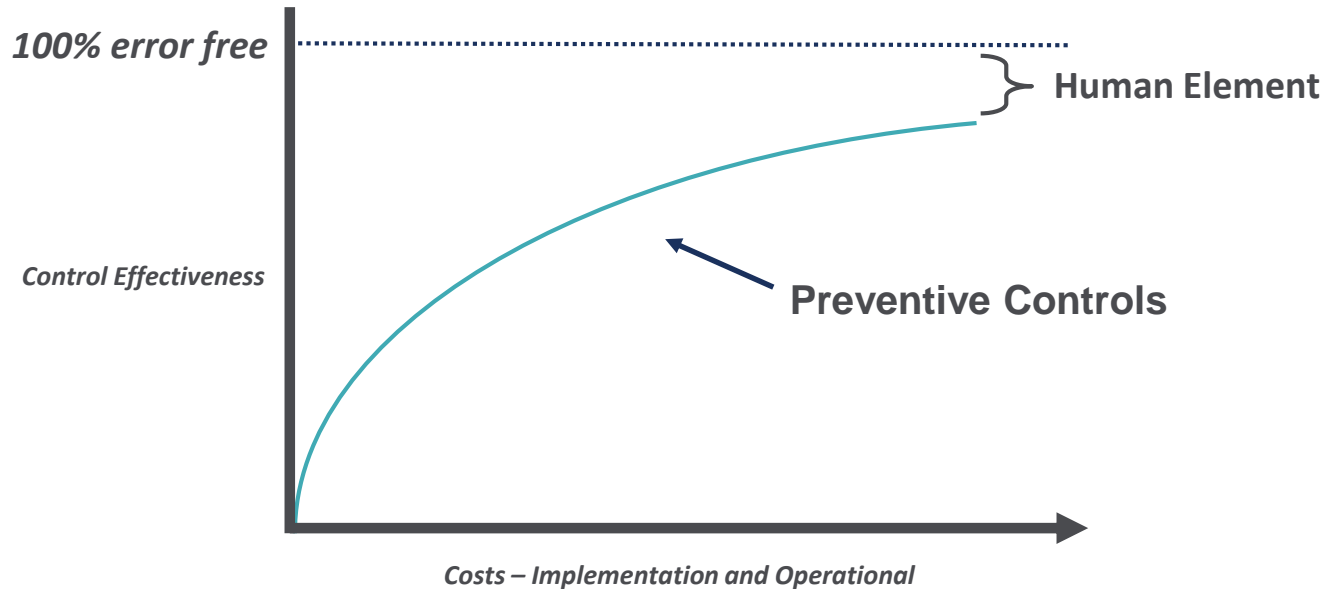
## 4

# Measurements Drives Ongoing Improvement

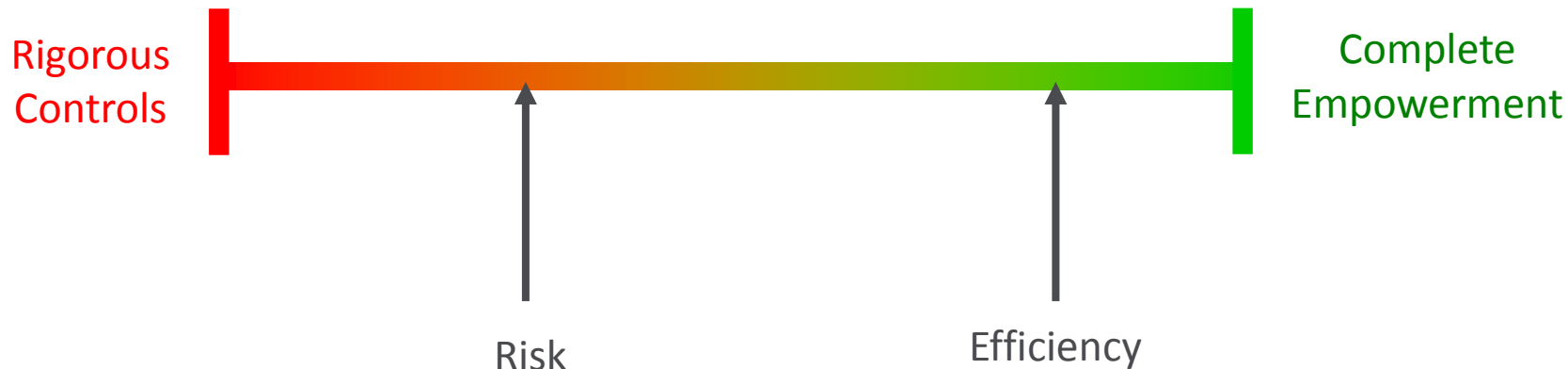


# Controls Prevent Problems – at a Cost

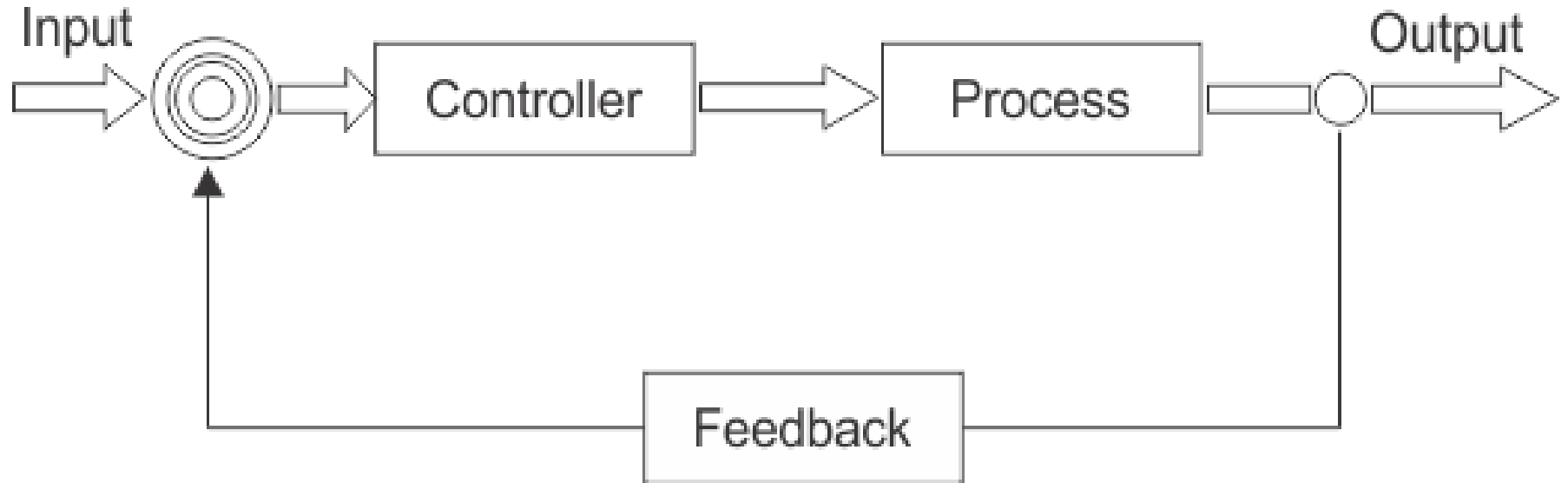
## Preventing Quality Defects in Finance



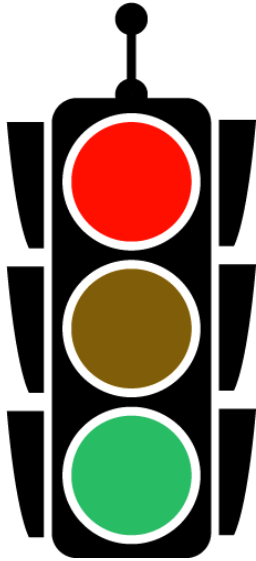
# Controls and Bureaucracy



# Closed Loop Control



# Complex Systems and Closed Loop Control



# 1960's Muscle Car – Pontiac GTO

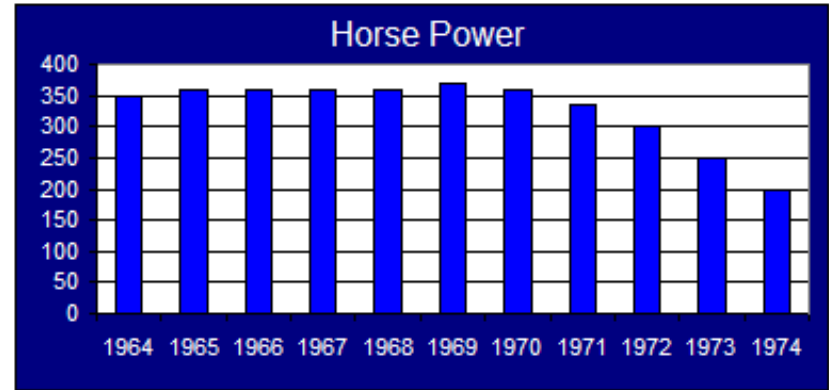
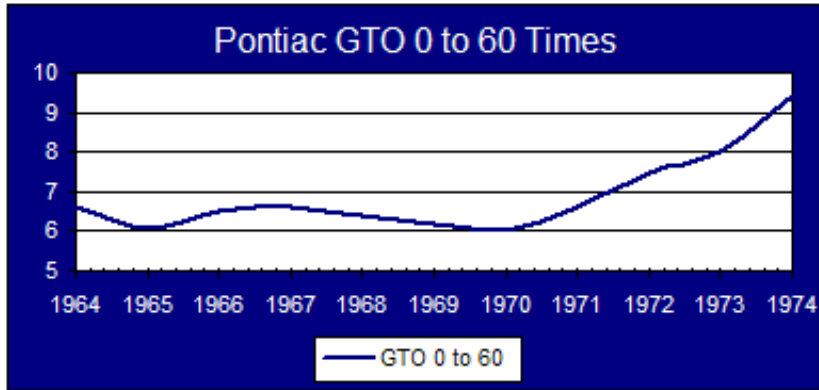
- **400 cubic inch engine**
  - 366 hp and 438 lb-ft torque
  - 0.9 HP per cubic Inch
- **4 MPG City**
- **9 MPG Highway**



# Surprise

- **Emission Controls in California Model Year 1966**
- **US Emission Controls Model Year 1968 based on Motor Vehicle Air Pollution Control Act of 1965 (Amendment to Clean Air Act of 1963)**
- **Clean Air Act of 1970**
- **Regulations by gas type**

# Emission Controls Hit the Muscle Car



- Source: Muscle Control Facts
- 1972 400 cubic inches with 250 HP
- Down from 350 in 1969!

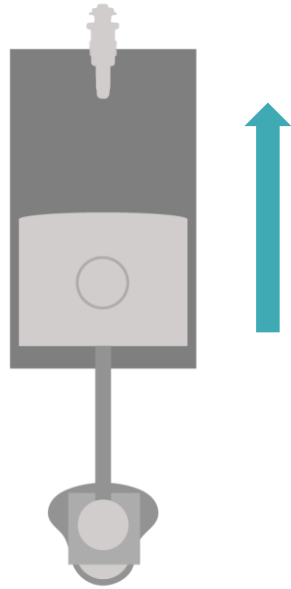
# Today's GTO



# More HP and Better Gas Mileage

- **All-aluminum 364 cubic inch Gen IV LS2 V8 engine**
  - 400 hp and 400 lb-ft torque
  - More the 1 HP per cubic Inch
- **17 MPG City**
- **25 MPG Highway**



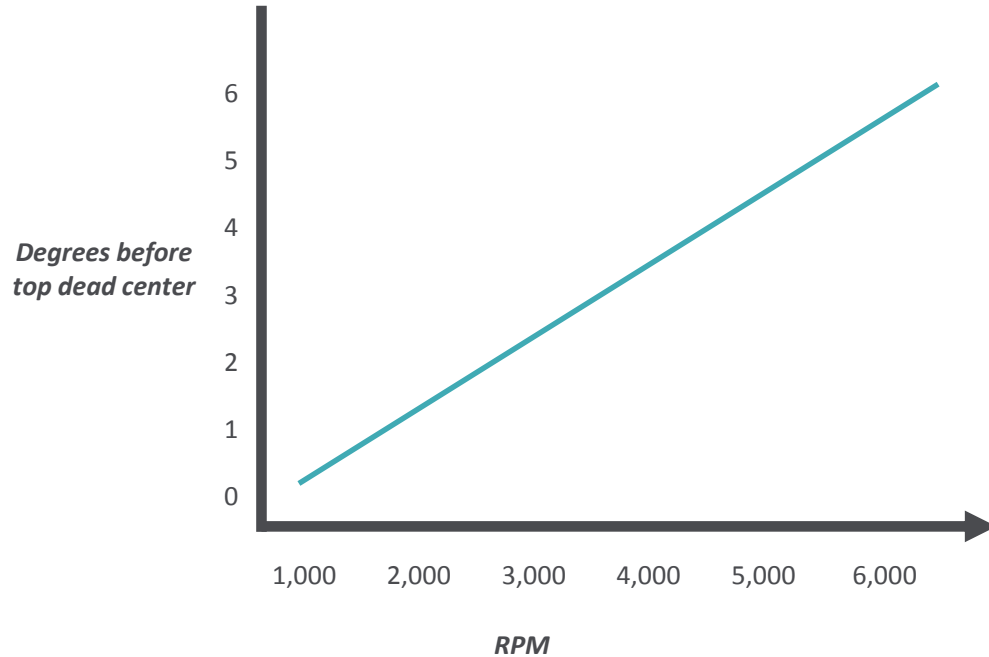


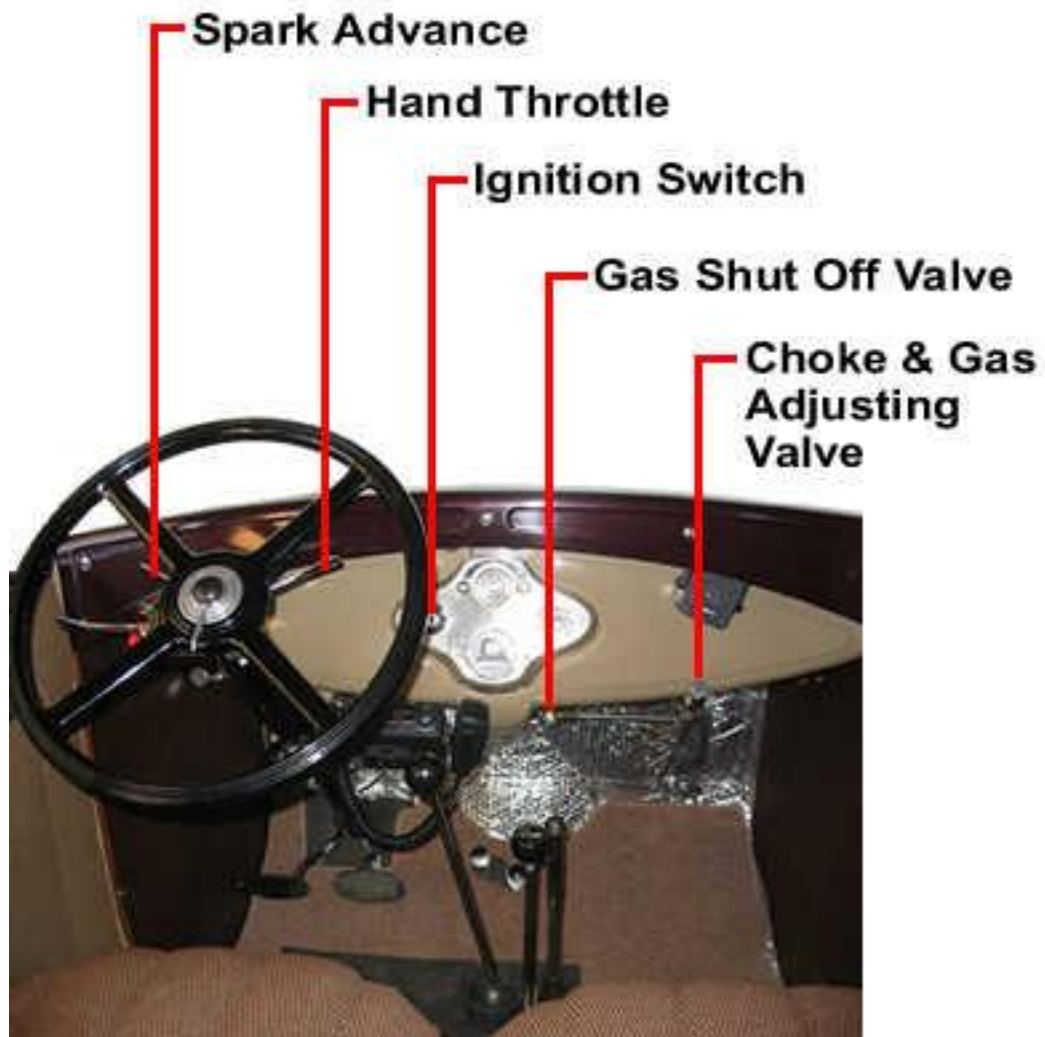
- **Piston goes up**
- **Compresses the gas and air**



- **Sparkplug ignites the gas**
- **Et Voila – produces power**

# Faster Engine Speeds – Spark the Gas Sooner





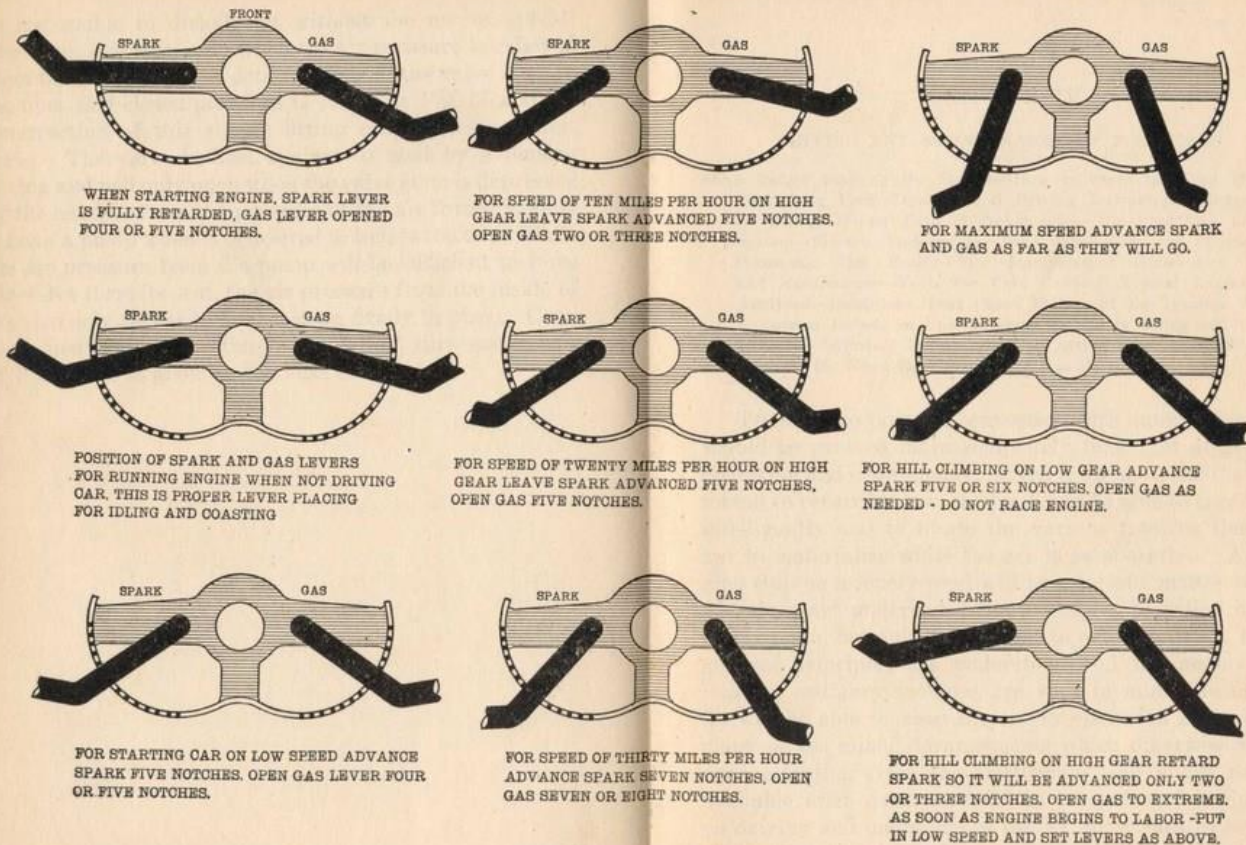


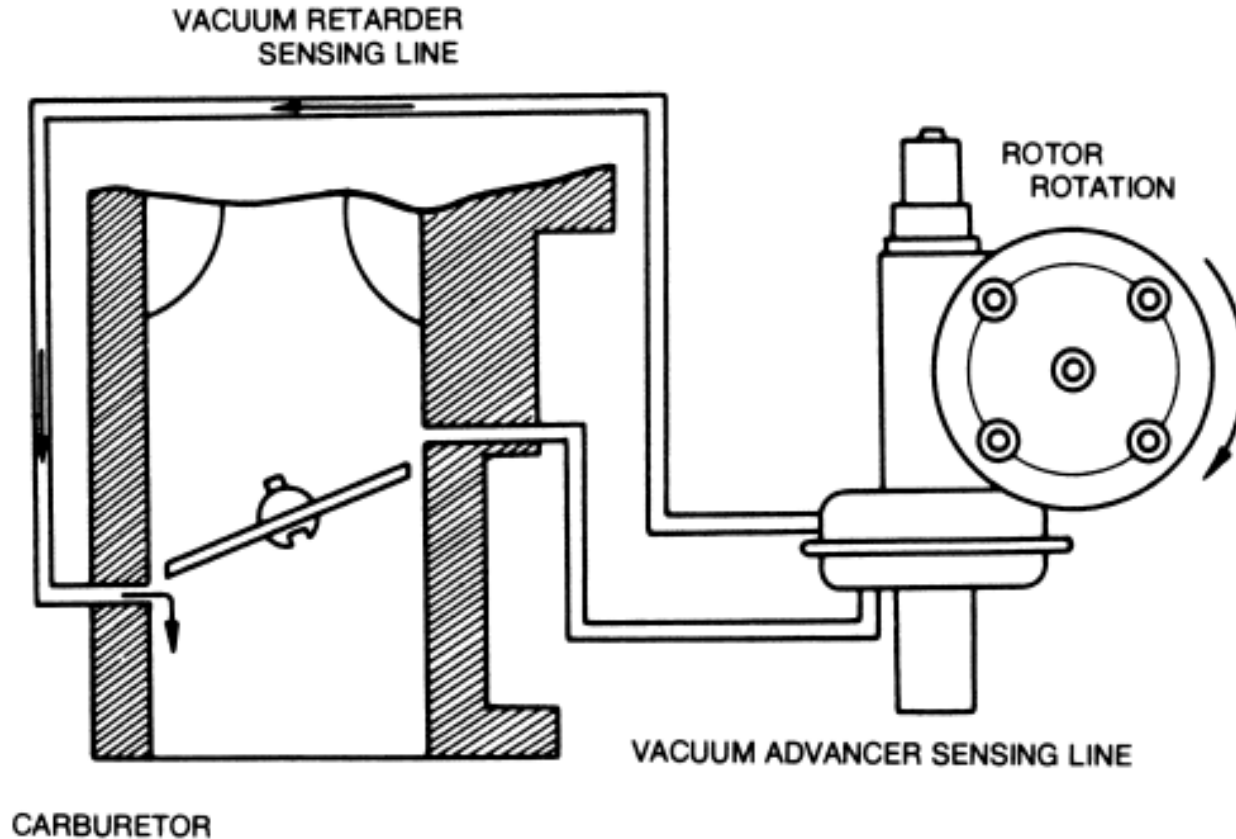
Fig. 38. Chart Showing Positions of Engine Control Levers on Steering Post Quadrants for Various Conditions of Car Operation. These are the Average Positions and May Vary Slightly on Different Ford Cars.

# Pre-Combustion – “Spark Knock” – Harms Engines

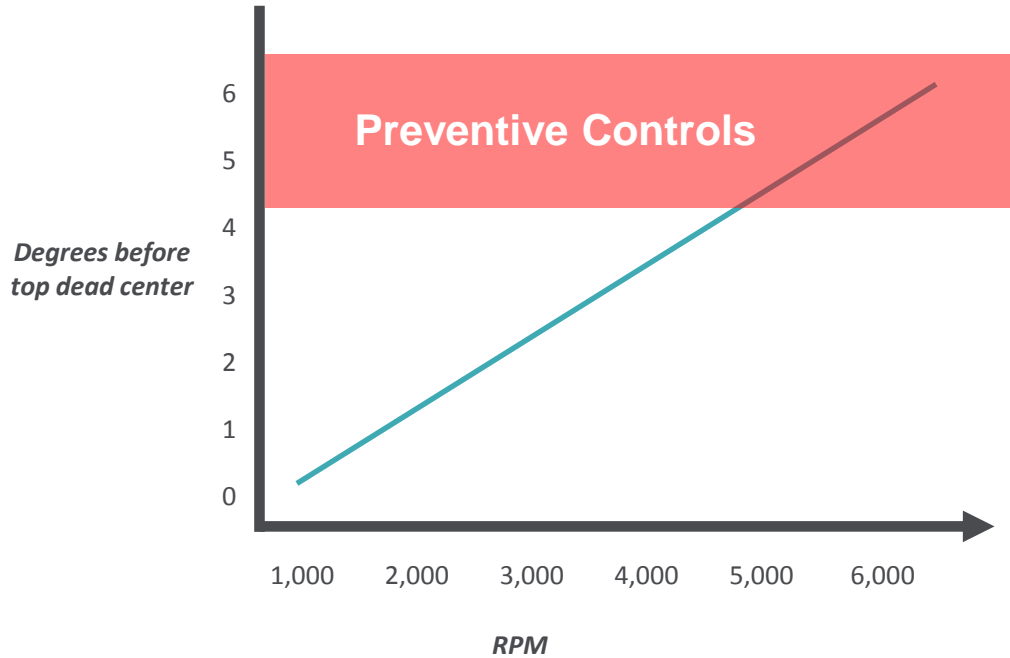


- **Heavy Load**
  - Uphill
  - Car full of passengers
- **Hot Day**
- **Gasoline's Octane**

# “Automating” Spark Advance

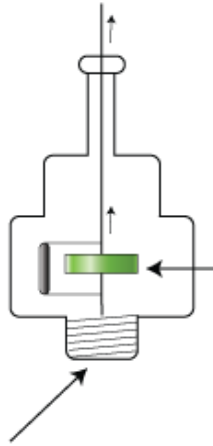


# No Monitoring for Spark Knock



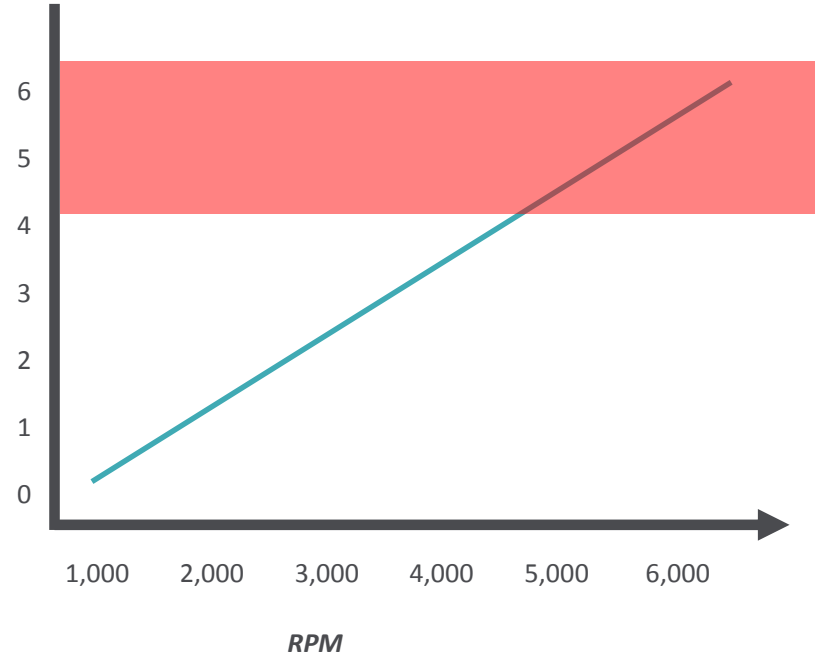
# Knock Sensor to the Rescue

If the engine detonates a voltage signal is sent to the PCM. The PCM then reduces spark advance.



A piezoelectric crystal produces voltage as it vibrates.

It is threaded into the engine block, cylinder head, or intake manifold.



# Superior Detective Controls – More Aggressive Operation

- **All-aluminum 364 cubic inch  
Gen IV LS2 V8 engine**
  - 400 hp and 400 lb-ft torque
  - More the 1 HP per cubic Inch
- **17 MPG City**
- **25 MPG Highway**



# Most of the Risk comes from few Employees/Vendors



**10% of travelers generate nearly all instances of high-risk activity**

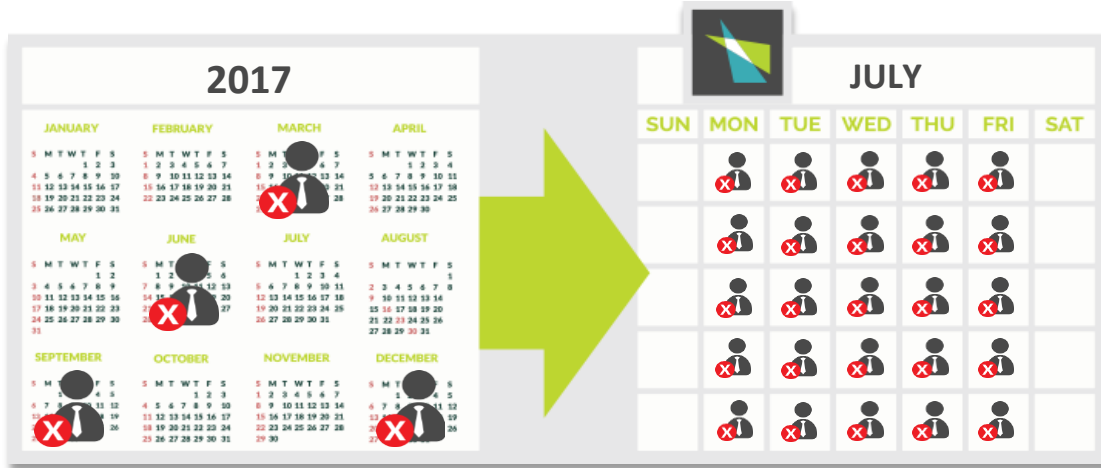
**Actual Fraud is 1/10ths of a %**

# Controls and Bureaucracy



# Fortune 10 Industrial

- Reduced review effort by 82%
- Eliminated Manager Approval
- Enhanced Fraud Detection
  - Went from firing 1 or 2 people/quarter to 5 or 6 people/week



# Rethinking Controls

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**Segregation of Duties**

**Sample Based Auditing**

**Purchase Card Limits**

**Manager Approval**

# One Last Thing



Thank you

