



# IBM SPSS Predictive Analytics

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Cognos.  
software

Information Management

***A Predictive Enterprise drives profitable revenue growth by embedding analytics into key business processes across its business and using analytics to drive core business decisions.***

*There's analytics...and analytics*

## *Core analytics/BI*

- Measure. Report. Study.
- “Rear-view mirror”
- Manually query your data

## *Predictive analytics*

- Algorithms automatically “learn” significant patterns
- Models make predictions for current/new cases
- Insight delivered to drive better business decisions

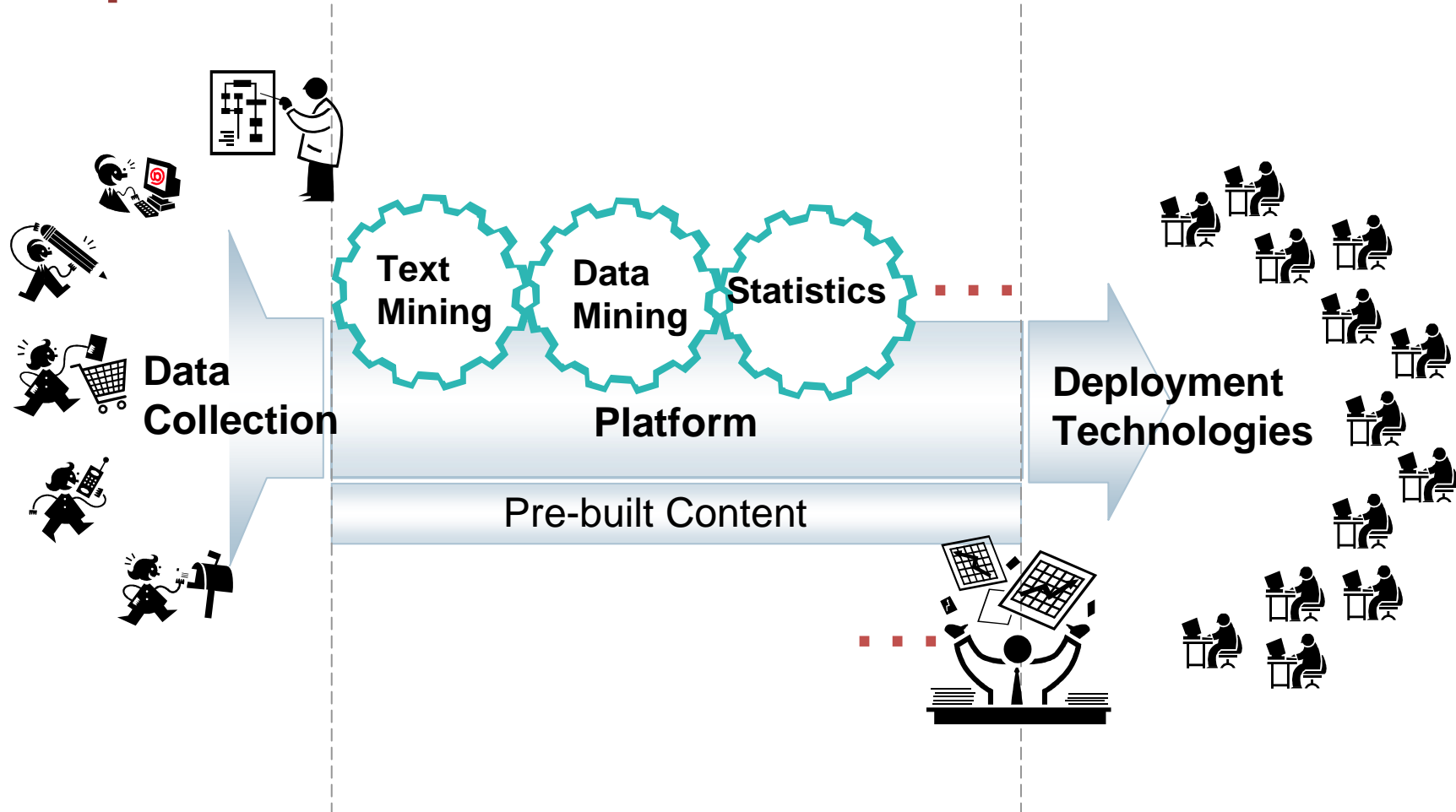
# Driving Smarter Outcomes

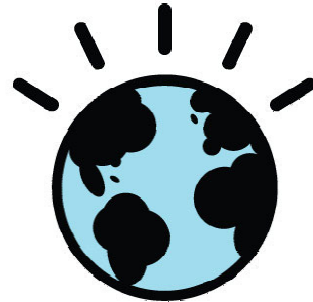
focus

Capture

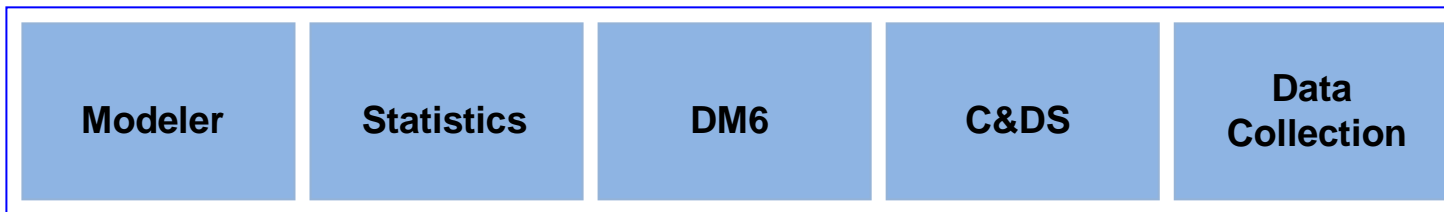
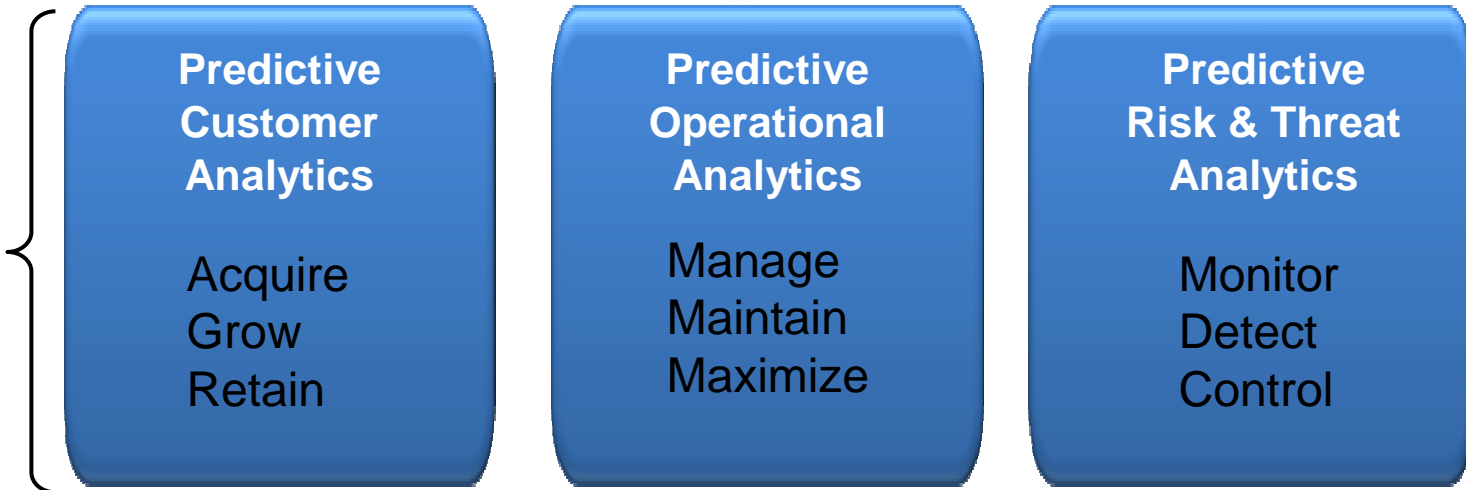
Predict

Act



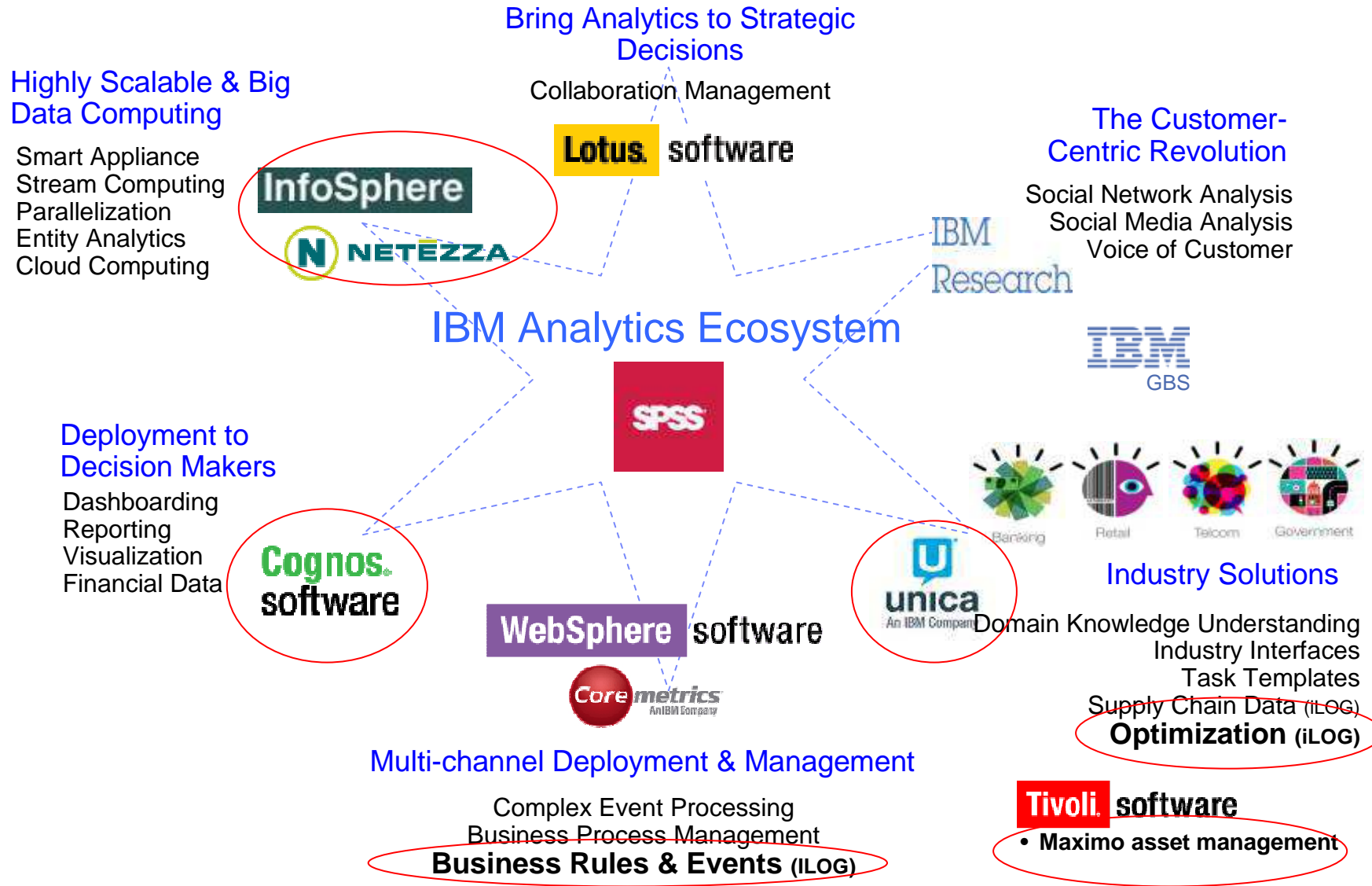


Pillars



SPSS Platform

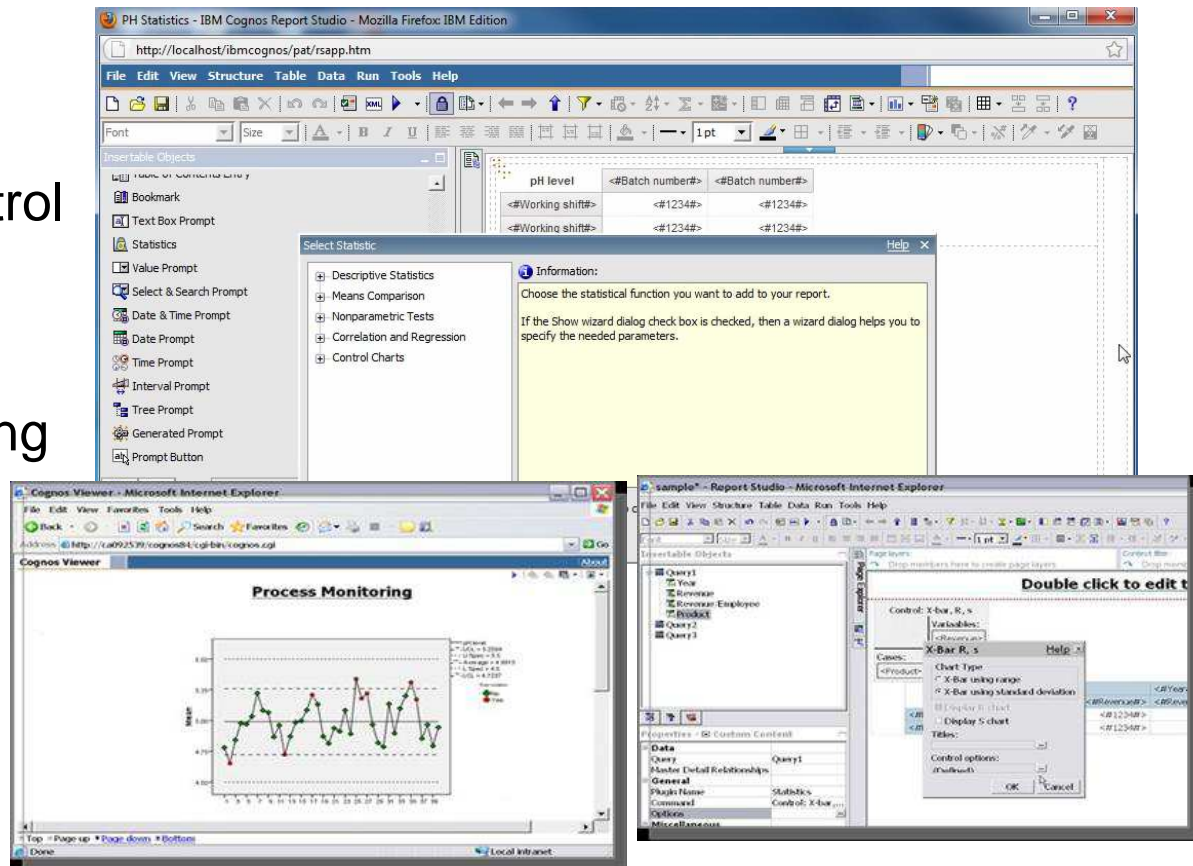
# Integration with other IBM solutions **focus**



# SPSS Statistics in Cognos 10

focus

- Wizard driven statistical analysis seamlessly integrated in reports (Report Studio)
- Shape and distribution of data
  - Histogram
  - Box Plots
  - Descriptive tables
- Statistical process Control
  - Control Charts
  - Control Rules
- Data Analysis and testing
  - Regression
  - Compare Means
  - Correlation



# New integration with Cognos 10

focus

## Benefits

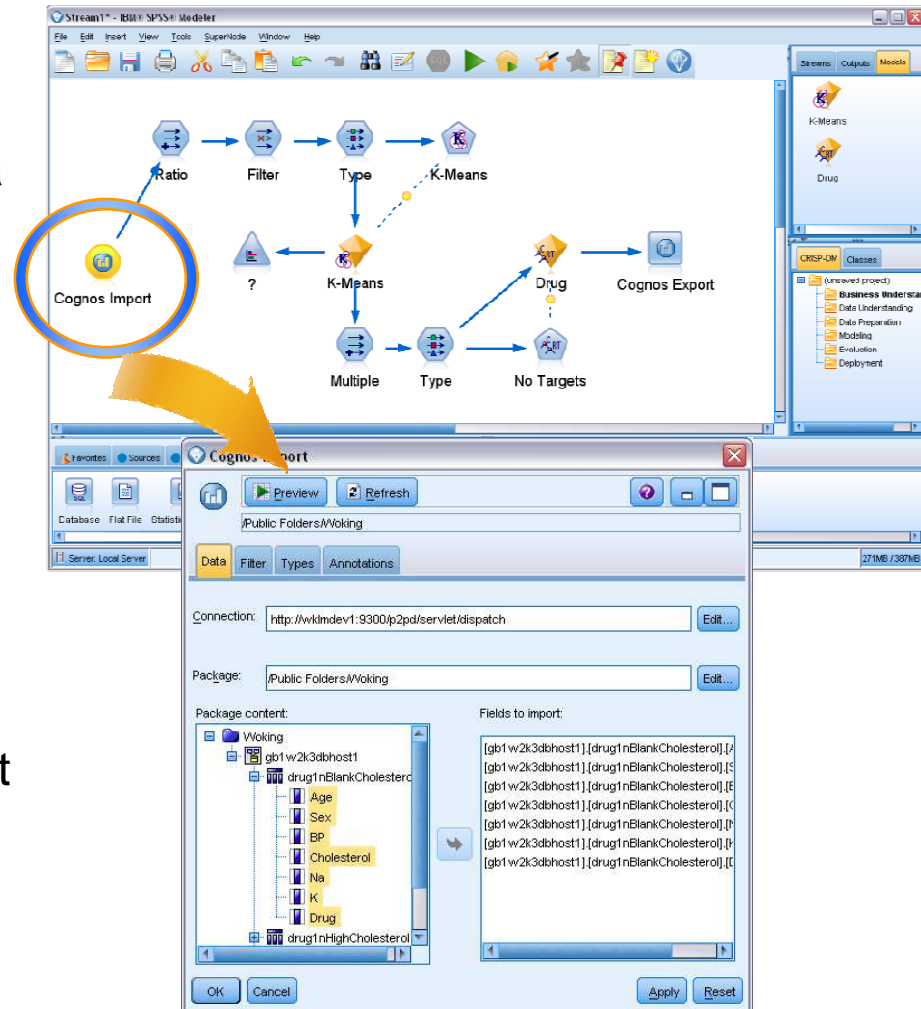
- Leverage investment in Cognos BI
- Enable easy access to Cognos BI data inside Modeler
- Avoid manual extraction & import of data

## New Cognos Nodes

- Source & Export
- Read / Write Cognos 8 Packages

## Note

- Currently support Cognos 8.4
- Plans to certify with Cognos 10, but not yet released
- Part of Modeler Professional





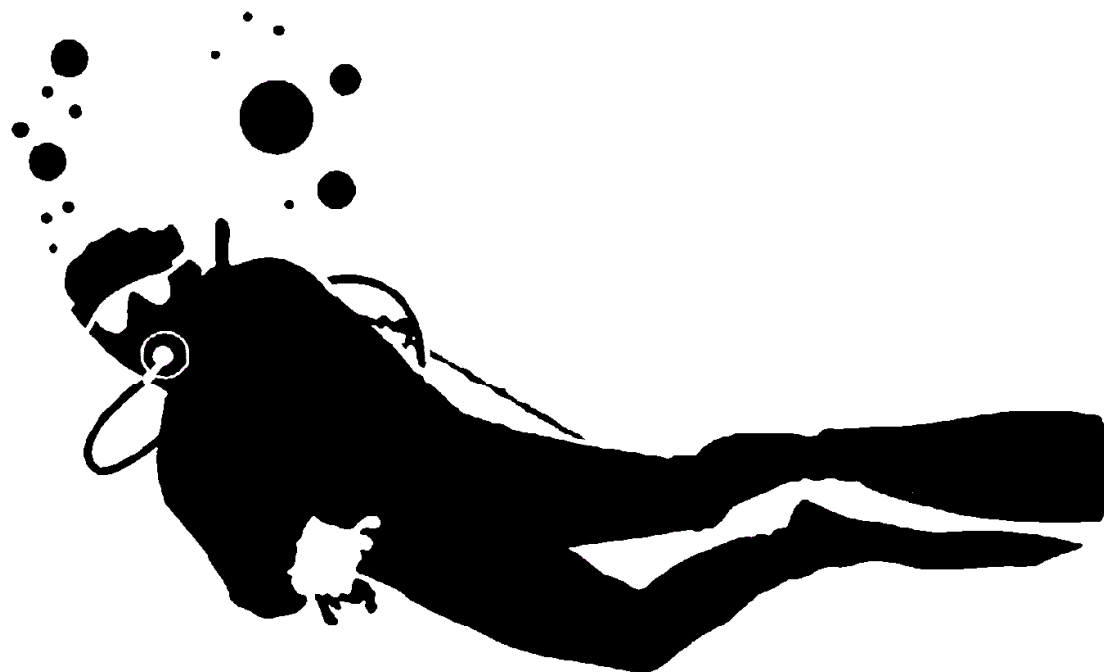
## Predictive analytics results

- Marketing campaign response up by 100%
- Costs down by 35% and a 29% increase in response rate – for greater profits
- Churn cut from 19% to 2%

An independent researcher found that the average ROI on a Predictive Analytics project was 250%

Let's dive in...

focus



# Industry specific applications

focus



## Smarter Education

- Student retention
- Curriculum optimization
- Alumni management



## Smarter Retail

- Assortment planning
- Promotion management
- Loyalty management



## Smarter Healthcare

- Evidence-based medicine
- Treatment optimization
- Preventive health management



## Smarter Manufacturing/ Mining

- Predictive maintenance
- Effective Asset Management
- Employee churn



## Smarter Government

- Preventive crime management
- Public resources optimization
- Constituents opinion management

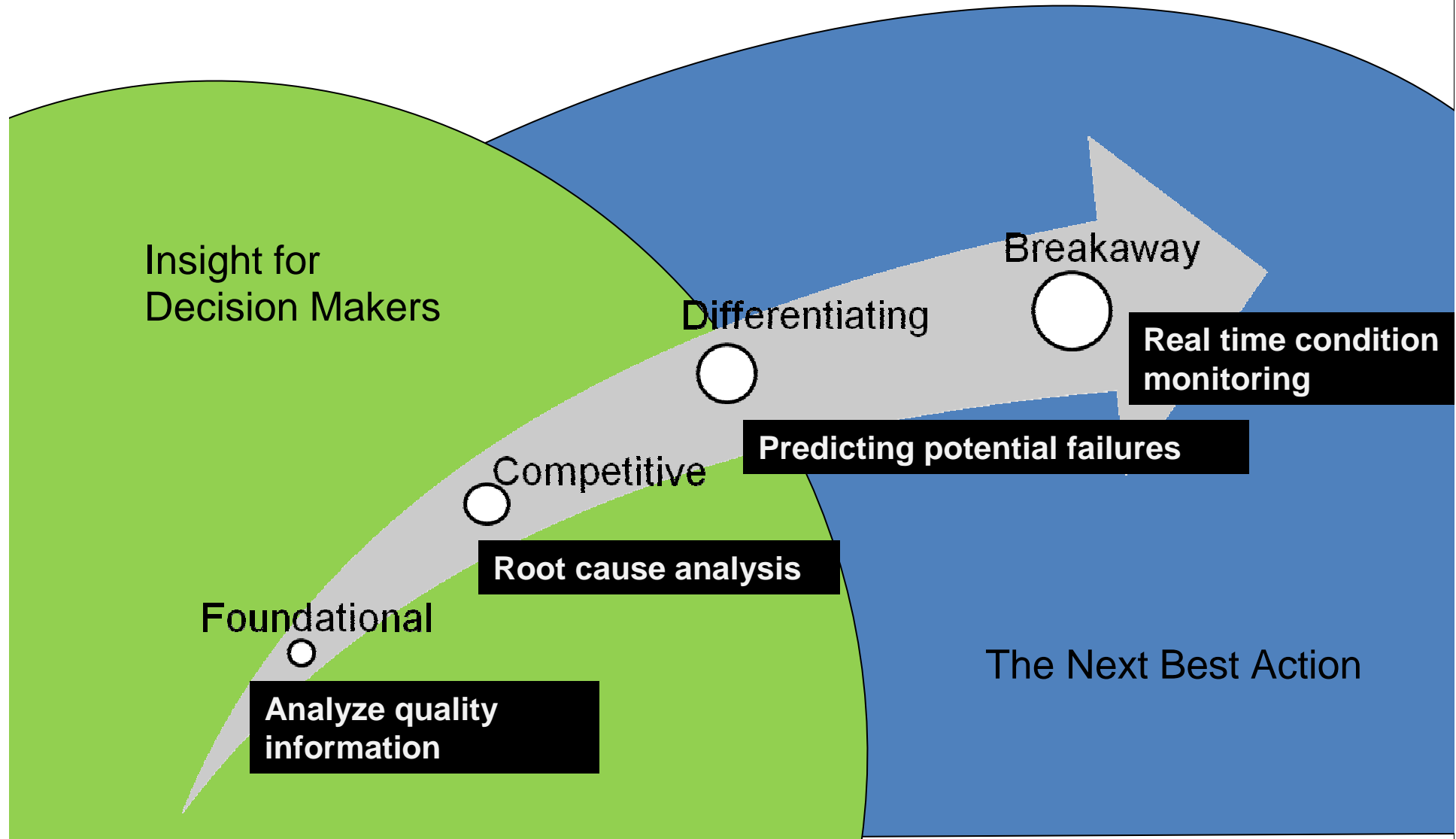


## Smarter Banking & Insurance

- Claims fraud detection
- Loan underwriting optimization
- Credit risk management

# The Predictive Journey

focus







## Johnny is arrested for breaking into a car

He is 15 years old and confesses that he wanted to belong to a group of friends



Will he become a repeat offender?

If YES: advise DA and later parole officer?

## A citizen reports a burglary

Reports that her house was burglarized while she was talking to a representative from the city council



Does this crime resemble others? Is it serial?

Do we have a team working on similar crimes that we can assign it to?

## A Break-in into a shop is reported

The perpetrators entered by breaking a window probably between 3am and 5am. Crime was discovered at 6 pm next day



Does it make sense to send out a CSI team?

Is it likely that they'll find useful evidence?

## An organized crime unit wants to bust a drugs ring

The detectives are interested in identifying the central players within a narcotics network



Who are the key persons? Who are the leaders?

# BUSINESS SCENARIO: POLICING - PROFILING



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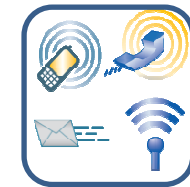
Crime Data



Crime record notes and call logs



Surveillance Data



Communication Data



Financial Data

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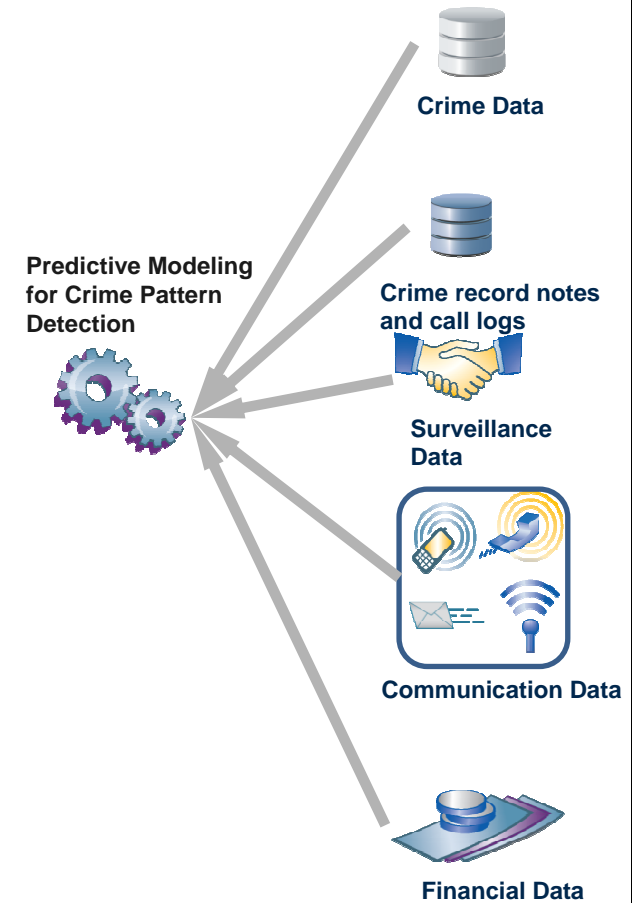
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## Aspiring Repeat Offender profile

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 If male  
 And age 14-16  
 And crime ='car break in'  
 And motive ='peer pressure'  
 Then repeat risk is HIGH → ALERT DA  
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Predictive Modeling for Crime Pattern Detection



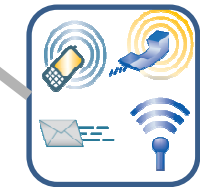
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## Crime profile → Team 4

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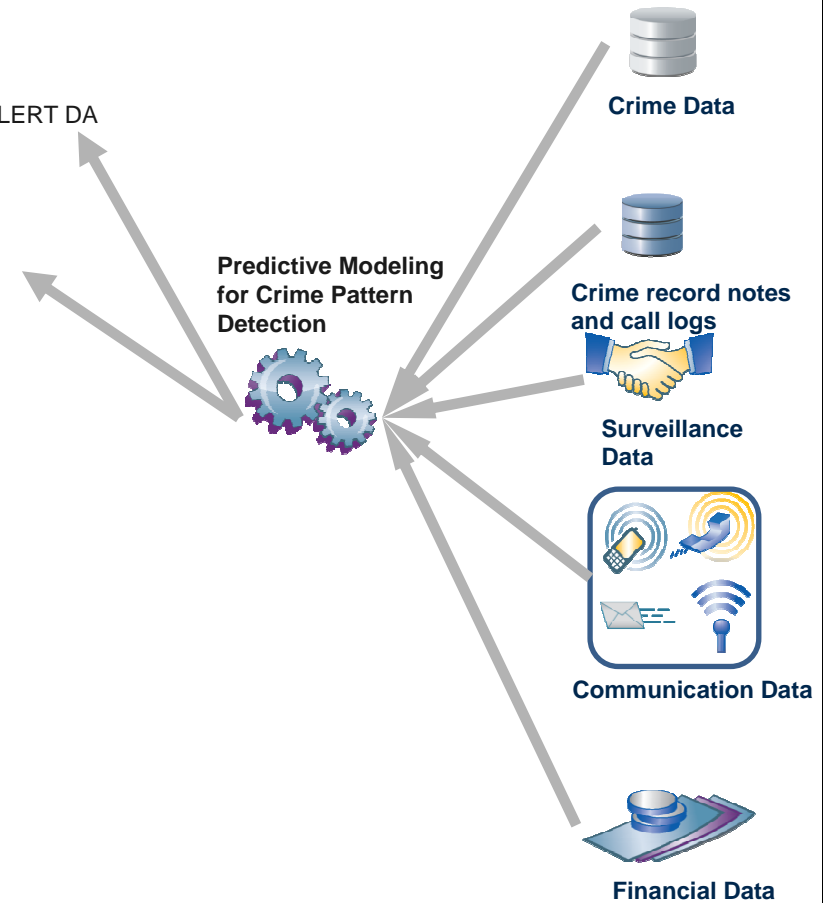
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## CS profile → No Deployment

```

...
If   Break In
And  Night
And  report > 12hrs
And  entry ='broken window'
And  object ='Commercial Property'
Then probability evidence is 6%
...
    
```



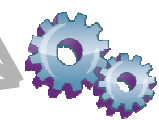
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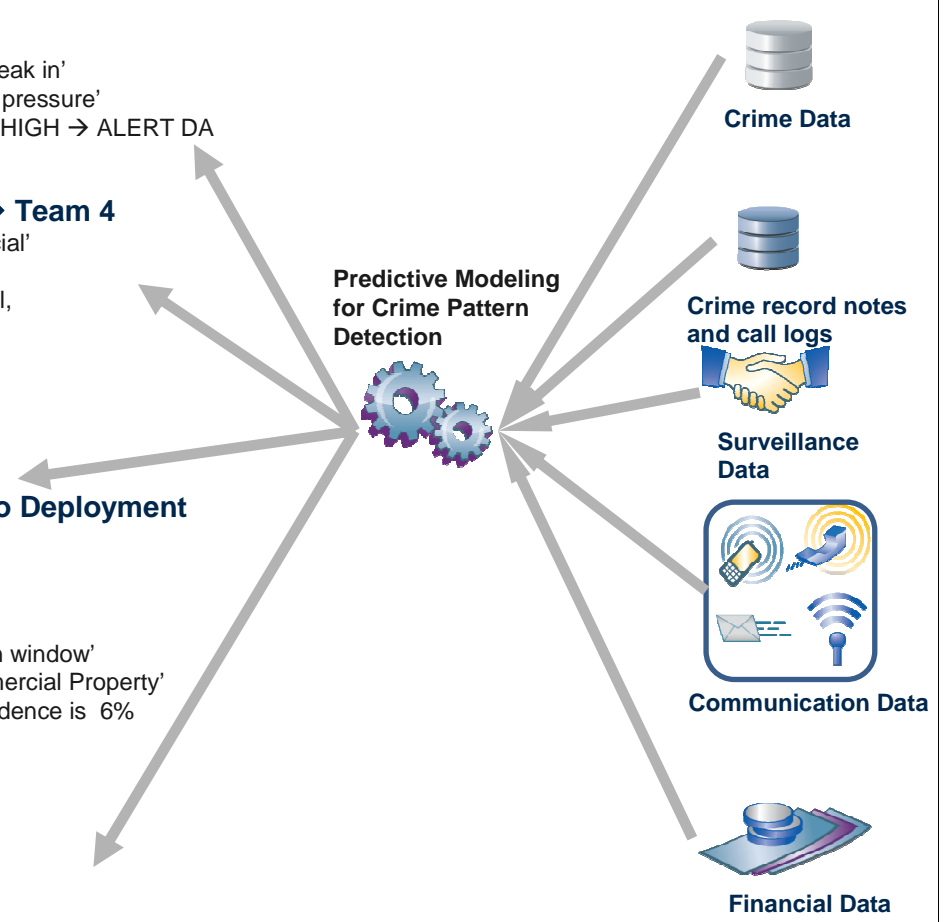


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### Key Players

Focus on:  
• Keith Patterson  
• Colin Wiertz  
• Markus Haffey



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