



# ● Make Every Decision the Right Decision with Decision Management

**Information On Demand 2010**

The Premier Forum for Information & Analytics

**Gain Insight. Optimize Results.**

CPA-3252A

Rob Risany, IBM Business Analytics

# What impacts your decision making?

Where you want to be!



A decision with a favorable outcome

What's in your way!



Data? Process?  
Policy? People?  
Location? Politics?  
Knowledge?  
Legal Constraints?  
Time?  
.....



# Who makes decisions?

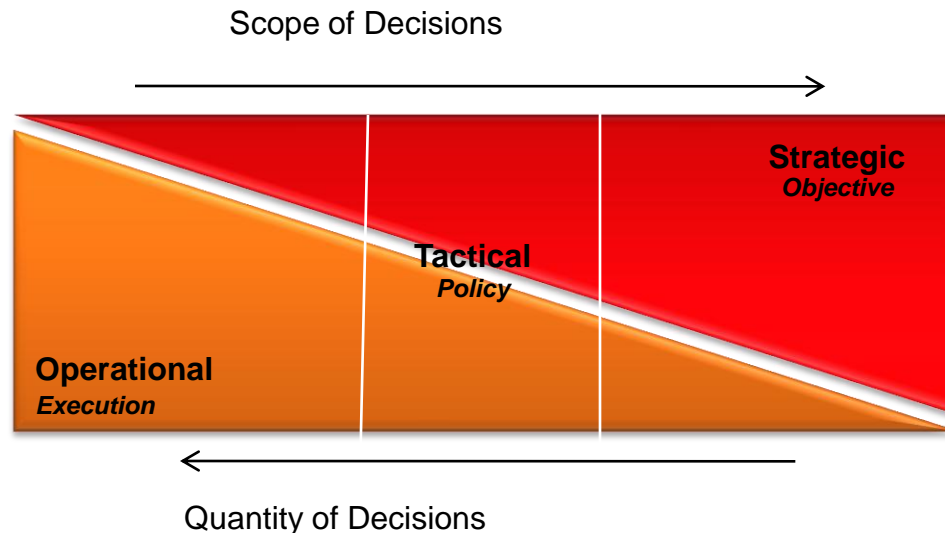
- Different kinds of people
  - Consumers
  - Call Center Reps
  - Sales People
  - Line of Business Managers
  - Executives
- Different kinds of systems
  - The IVR / Phone system
  - The website
  - The CRM system
  - A custom risk management database





# Decisions vary in scope

- **Strategic decisions**
  - Set the long-term direction for the organization. An initiative which results in guidelines within which operational decisions are made.
- **Tactical decisions**
  - The formation of policy or process. Focused on a specific project or objective which is executed at a tactical level.
- **Operational decisions**
  - Applying a policy, process, or rule set to a specific case. Lends itself to automation





# Problems Inevitably Lead to Operational Decisions

- Public Security
  - Problem: I can't search every car that crosses the border.
  - Decision: Which car should I search?
  - Who: Border Control Guard
- Insurance
  - Problem: I can't investigate every claim for fraud.
  - Decision: Should I investigate this claim?
  - Who: Claims Specialist
- Telecommunications
  - Problem: I can't save every customer.
  - Decision: Is it worth trying to save this customer?
  - Who: Call Center Agent





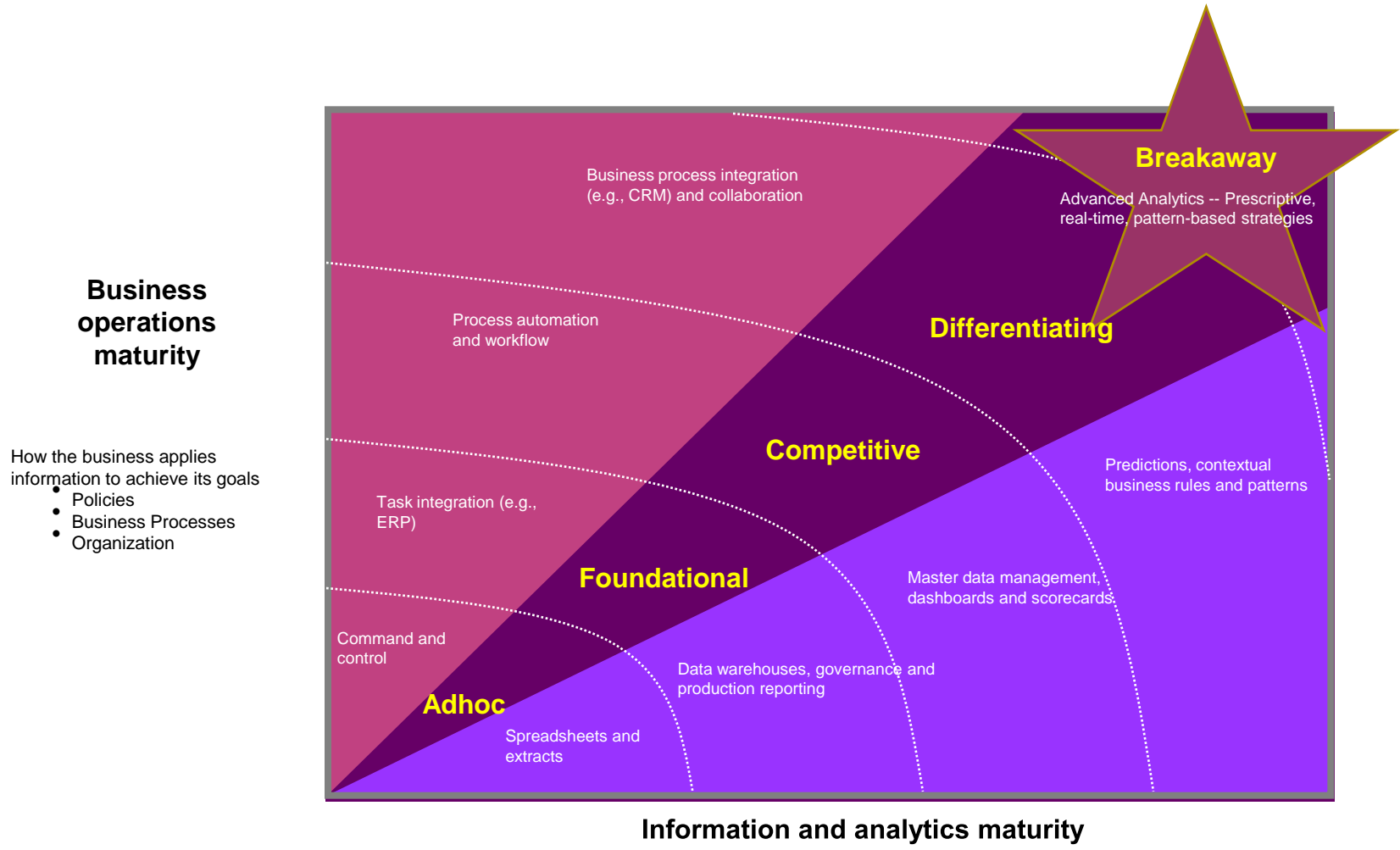
# Practical Advice

- When you get home – identify a business objective where you care about the results
- Identify the limiting factor of the decision – the problem.
- Identify WHO makes decisions which impact this business problem – cover strategic, tactical and operational perspectives





# How Mature is Your Decision Making?

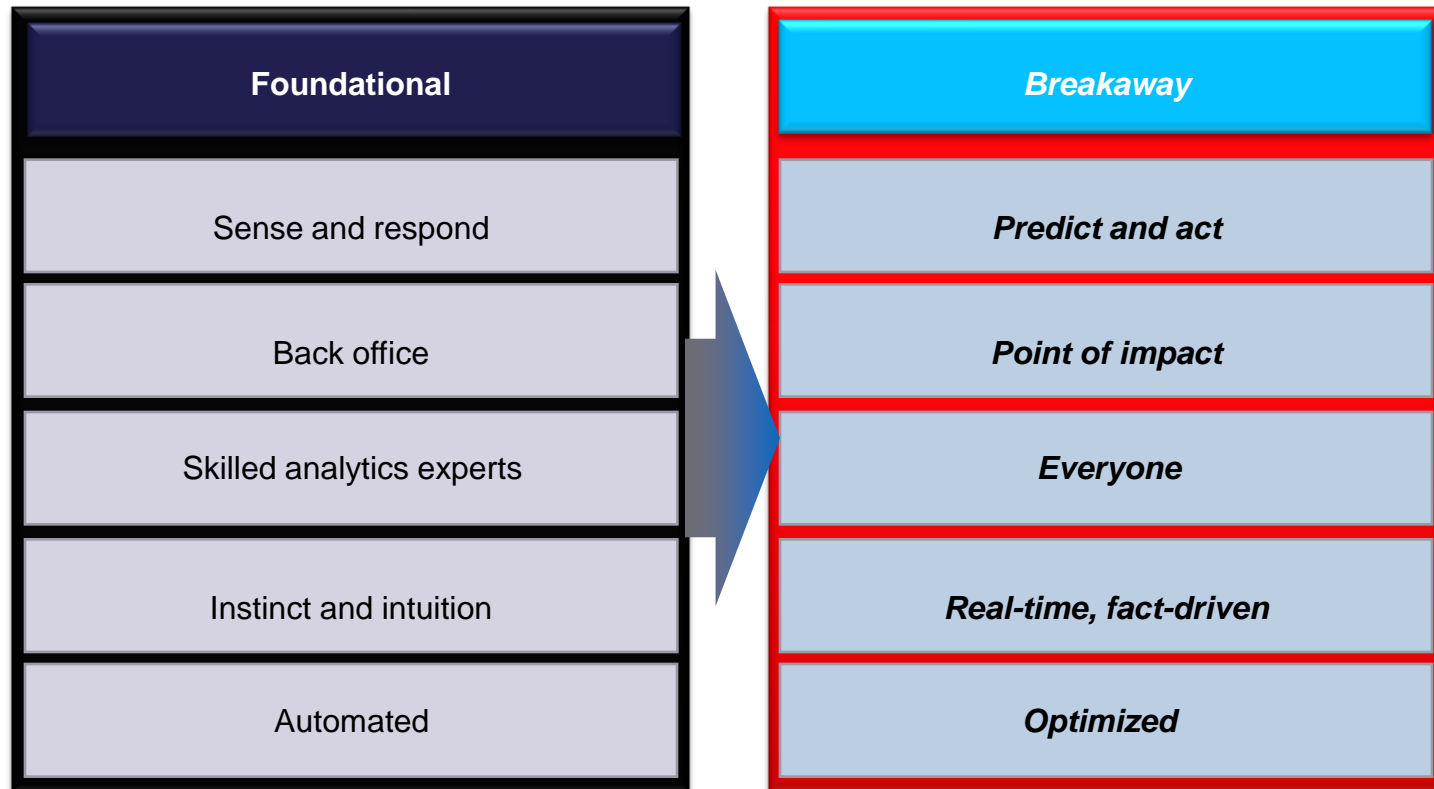


Source: *Breaking Away with Business Analytics and Optimization: New intelligence meets enterprise operations* available in late 2009 at [www.ibm.com/gbs/intelligent-enterprise](http://www.ibm.com/gbs/intelligent-enterprise).





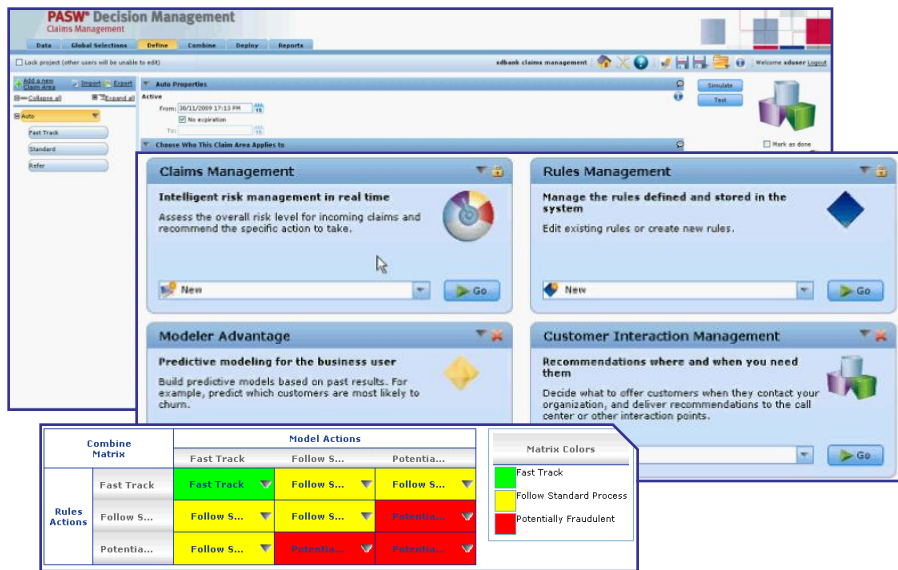
# Optimizing Every Decision at the Point of Impact...







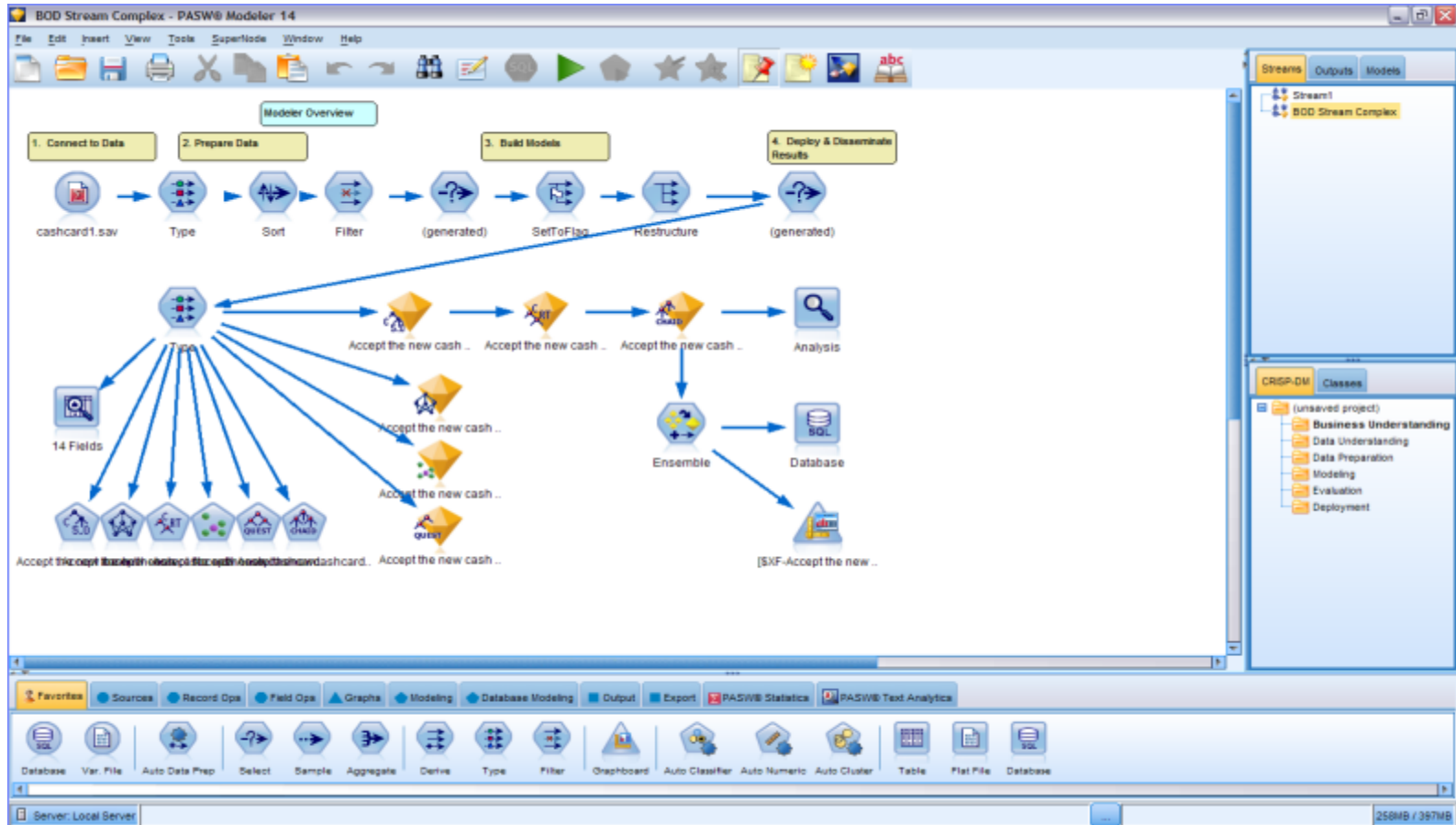
# Transformation with IBM SPSS Decision Management



- The power of predictive analytics:
  - In the hands of the business
  - In language they can understand
- Best practices decision making for industry problems
  - Completely configurable solution templates
- Focused on the point of impact
- Automated decisions become part of the business DNA

The next wave of predictive analytics – built on convergence

# From Skilled Analytics Experts to Everyone— from this....





# To this!

IBM® SPSS® Modeler Advantage

**Data** **Modeling** Score

Model type:  Auto model  Interactive model

Data source:

Target:  Accepted Personal Loan

Records used to build: ...

**Data**

Select data for model building or scoring.

This may include information about current customers and results from previous campaigns.

**Modeling**

Build models using analytical data, and evaluate using variable importance, distribution, and gains charts.

**Score**

Apply models to operational data to predict which customers are most likely to respond.

***3 Click Automated Modeling with Modeler Advantage,  
Part of Decision Management***





## Practical Advice

- Take a skills inventory of the people who impact your decisions.
- Understand which questions can only be answered by your analytic experts – what would happen if those people didn't come to work tomorrow?





# From Instinct & Intuition to Fact Driven Solutions

- Decision Management for Claims

- Decision Management for Customer Interactions

**Data Global Selections Define Combine Deploy Reports**

Lock project (other users will be unable to edit)

What If...

Simulation Data Source: sdbank claims data | Simulation Date: 2009-11-02 12:41:27 | Claim Area: AAA 15 Auto | Interaction Point: All interaction points

| Combine matrix | Model actions | Results |          |            |
|----------------|---------------|---------|----------|------------|
|                |               | Refer   | Standard | Fast Track |
| Refer          | Refer         | 77      | 9.872%   |            |
| Standard       | Standard      | 187     | 23.974%  |            |
| Fast Track     | Fast Track    | 516     | 66.154%  |            |
|                |               | 780     | 100%     |            |

Name: Run 3

Total Simulation Records: 975

Display: Count | Number of runs retained: 3

| Action     | Run 1 | Run 2 | Run 3 | Distribution |
|------------|-------|-------|-------|--------------|
| Refer      | 22    | 25    | 77    |              |
| Standard   | 55    | 239   | 187   |              |
| Fast Track | 703   | 516   | 516   |              |
| Total      | 780   | 780   | 780   |              |

**Data Global Selections Define Prioritize Deploy Reports**

Lock project (other users will be unable to edit) | Customer Interactions LATEST

Retention Properties

Active: From: 2009-10-23 19:54:14 | To: 15 | No expiration

Interaction points:  Call Centre  Website  Branch

Choose Who This Campaign Applies to

Find an existing rule | Create a new rule | View selection logic | Export

Rule name: High Value Customers | Include/Exclude: Include

Allocate to:  Allocate using rules  Allocate randomly

Allocate to:

| Rule name   | Allocate to     | Sort |
|-------------|-----------------|------|
| 1 Females   | Theatre Tickets |      |
| 2 Males     | Racing Day      |      |
| 3 Remainder |                 |      |



# Making the business successful: Structured analytical decision making



1. Connect to data
2. Define Scope of Decisions with Global Selections
3. Define desired outcomes
4. Define business rules / models
5. Optimize the Decisions
6. Deploy / Score
7. Report





# Steps 1 & 2

- Select Data Sources... Step 1

**Data Sources**

Project Data Sources + Add a data source

| Name                               | Preview | Compatible                 | Copy | Remove | <input type="checkbox"/> Lock |
|------------------------------------|---------|----------------------------|------|--------|-------------------------------|
| <a href="#">sdbank claims data</a> |         | Project Data Model         |      |        | <input type="checkbox"/>      |
| <a href="#">sdbank fraud data</a>  |         | <a href="#">Map Fields</a> |      |        | <input type="checkbox"/>      |

**Manage Global Selections** Export

Find an existing rule Create a new rule View selection logic

| Rule name -                      | Include/Exclude | Remove |
|----------------------------------|-----------------|--------|
| 1 <a href="#">Natural Causes</a> |                 |        |
| Cause Accident = Nat...          |                 |        |

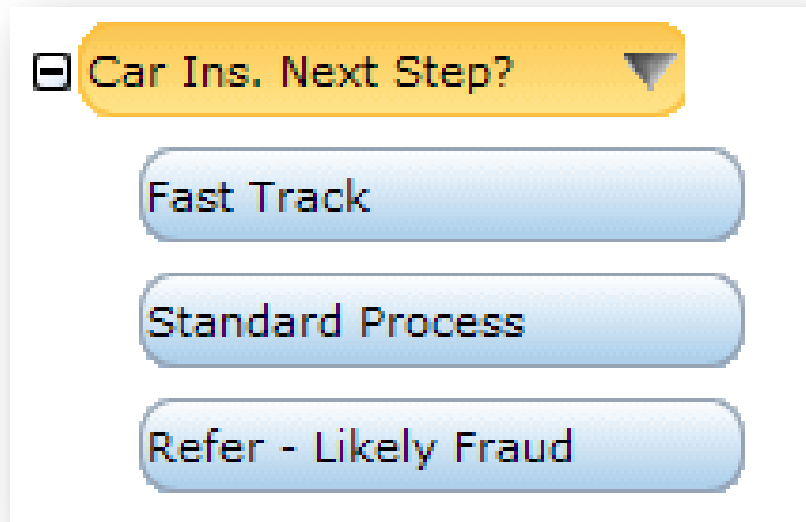
- Define Scope with Global Selections... Step 2





# Defining Desired Outcomes... Step 3

Typically with all decisions there is a finite set of desired outcomes that can be achieved.



The Insurance Company identifies three possible outcomes to the decision.

“There’s three things we could do: Fast track, Standard process, Investigate”







# Define Rules and Models... Step 4

Business user defines rules that embody their priorities and experiences

| Rule name -                          | Risk points | Sort | Remove |
|--------------------------------------|-------------|------|--------|
| 1 <u>Young Male Driver</u>           | 2           | ▲▼   |        |
| 2 <u>Initial Provision over 3k</u>   | 1           | ▲▼   |        |
| 3 <u>Initial Provision above 5k</u>  | 2           | ▲▼   |        |
| 4 <u>Police not called to the...</u> | 2           | ▲▼   |        |
| 5 Remainder                          | 0           |      |        |

[Add Action](#) [Add annotations](#)

|   | Sum of Points >= ↓ | Allocate to          | Remove |
|---|--------------------|----------------------|--------|
| 1 | 5                  | Refer - Likely Fraud |        |
| 2 | 2                  | Standard Process     |        |
| 3 | 0                  | Fast Track           |        |

Existing Models are leveraged – or new ones are created by the business user

[Find a model](#) [Build a model](#)

| Model                        | Target | Measure    | Remove |
|------------------------------|--------|------------|--------|
| <u>fraud_model.str</u> Fraud |        | Propensity |        |

[Add Action](#) [Add annotations](#)

|   | Propensity >= ↓ | Allocate to          | Remove |
|---|-----------------|----------------------|--------|
| 1 | 0.5             | Refer - Likely Fraud |        |
| 2 | 0.3             | Standard Process     |        |
| 3 | 0               | Fast Track           |        |

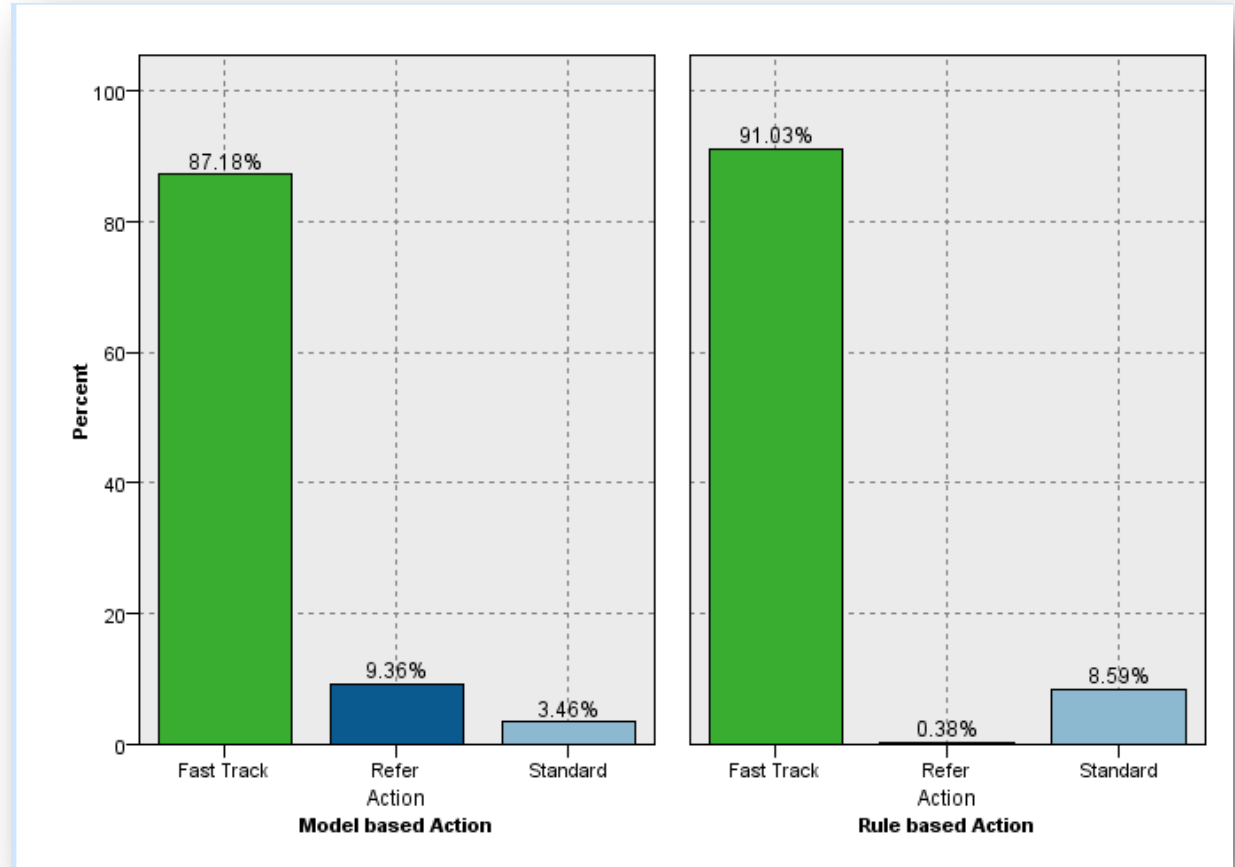


# Define Rules and Models... Step 4

Models and Rules each contribute...

Valuable standalone...

But much more useful together!





# Optimize Outcomes... Step 5

The decision outcome is optimized and balanced between the predictive models that provide real time insight and the rules that govern the policy and practices of the company

What If...

Simulation Data Source: sdbank claims data | Simulation Date: 2010-04-26 10:42:37 | Claim Area: Auto

| Combine matrix | Model actions |            |            | Results    |       |         |
|----------------|---------------|------------|------------|------------|-------|---------|
|                | Refer         | Standard   | Fast Track | Action     | Count | Percent |
| Rules actions  | Refer         | Refer      | Standard   | Fast Track | 710   | 91.03%  |
|                | Standard      | Standard   | Standard   | Refer      | 3     | 0.38%   |
|                | Fast Track    | Fast Track | Fast Track | Standard   | 67    | 8.59%   |
|                |               |            |            |            | 780   | 100%    |

Name: Run 3 [Run] [Update Settings] [Close]

Total Simulation Records: 975

Display: Count | Number of runs retained: 2

| Action     | Run1 | Run 2 | Distribution |
|------------|------|-------|--------------|
| Fast Track | 680  | 710   |              |
| Refer      | 62   | 3     |              |
| Standard   | 38   | 67    |              |
| Total      | 780  | 780   |              |

*Flexible What-if tools for Optimization and Prioritization*





# Deploy... Step 6

Deploy As

- Deploy
- Testing
- Preproduction

- The project is ready to move into production (for real time inbound decisions) or score in batch to deliver outbound communications
- Model Management capabilities allow ongoing monitoring / improvement of the models in production

SDBankInsure Welcome: Piet Pietersen | log out | help

Thursday: 2010-04-15

Customer ID: 1 Claim ID: 2554363

**START**

**NOTIFICATION**

- Identification
- Incident
- Damage
- Liability

**CLAIM**

- Coverage
- Payment

**ALERT**

**Identification**

Gender of Driver \* Male

Age of Driver \* 20

Cause Accident \* Collision in the back

Claim Type Notification \*

Claim Area \* Auto

Postal Code

Phone Number

Occupation

**Incident**

Date of loss 01/03/10

Time of loss 1:00

Number of vehicles 2

Number of damaged vehicles 1

Number of towed vehicles 0

Towing service used No

Number of people 2

Number of injured people 1

Number of witnesses 0

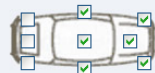
Ambulance  Yes  No  Unknown

Police report \*  Yes  No  Unknown

**Damage**

Claim type \* Only injury

Incident description route (incident site not recalled. Policyholder seemed vague on some of the specific details.)

Damage 

**Payment**

Total reserve amount (initial provision) \* 6500

Total property damage 2000

Total medical bills 4500

**Coverage**

Comp & collision

Property damage

Liability property damage

Liability bodily injury

Uninsured motorists property damage

Uninsured motorists bodily injury

Person injury protection

Medical payment

**Liability**

Responsibility

Suggested Action: Refer  
Claim Area evaluated: Auto



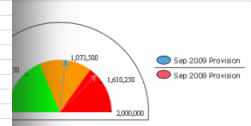
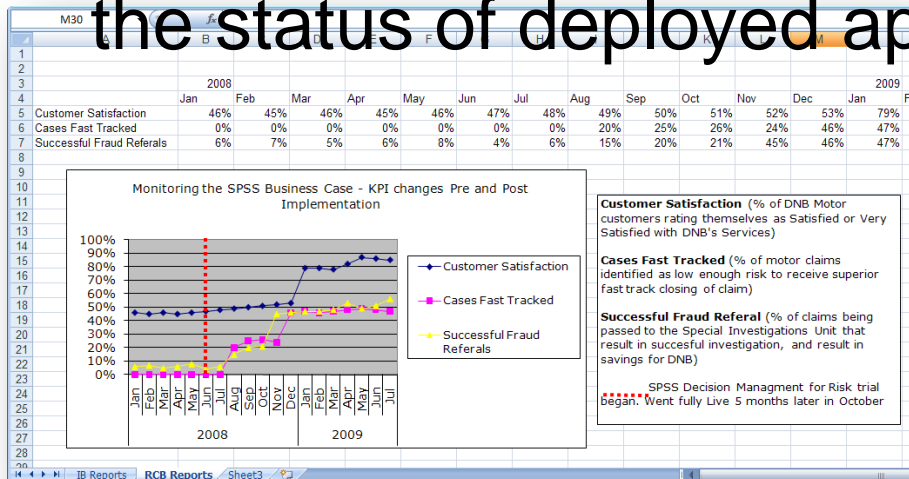
# Report on outcomes... Step 7

**My Reports**

Find a report

| Name                       | Author | Version       | Action | Remove |
|----------------------------|--------|---------------|--------|--------|
| SimpleListReport.rptdesign | admin  | 1270752572484 |        |        |
| Fraud KPIs.xls             | admin  | 1270750743562 |        |        |

## The Report tab allows you to monitor the status of deployed applications



BD Bank Inc. Special Investigations Unit Report

For Internal use only  
Report Generated on 4/9/10

**Customer Listing (Claims with Initial Provision set at greater than 10000)**

| Claim ID                     | Customer ID | Claim Type          | Initial Provision                    |
|------------------------------|-------------|---------------------|--------------------------------------|
| <b>Change of direction</b>   |             |                     | <b>Total Provision: \$207,800.00</b> |
| 2310101                      | 18772187    | Material and injury | \$15,700.00                          |
| 2323924                      | 1827969     | Material and injury | \$15,700.00                          |
| 2329162                      | 18829826    | Material and injury | \$17,450.00                          |
| 2395532                      | 18853076    | Material and injury | \$15,700.00                          |
| 2421511                      | 18862039    | Material and injury | \$15,700.00                          |
| 2424226                      | 18962950    | Material and injury | \$15,700.00                          |
| 2458208                      | 18874694    | Material and injury | \$15,700.00                          |
| 2467421                      | 8655555     | Material and injury | \$17,450.00                          |
| 2487918                      | 18505049    | Material and injury | \$16,900.00                          |
| 2506060                      | 8638132     | Material and injury | \$15,700.00                          |
| 2526452                      | 18896406    | Material and injury | \$15,700.00                          |
| 2536647                      | 8891423     | Material and injury | \$20,200.00                          |
| <b>Collision in the back</b> |             |                     | <b>Total Provision: \$15,700.00</b>  |
| 2306838                      | 18821850    | Material and injury | \$15,700.00                          |
| <b>Exceeded speed limit</b>  |             |                     | <b>Total Provision: \$155,800.00</b> |
| 2314161                      | 8887959     | Only injury         | \$29,000.00                          |
| 2323993                      | 18833323    | Material and injury | \$15,700.00                          |
| 2348786                      | 18835446    | Material and injury | \$17,150.00                          |
| 2395607                      | 18853105    | Material and injury | \$31,400.00                          |
| 2421086                      | 18861916    | Material and injury | \$15,650.00                          |
| 2531398                      | 18898328    | Only injury         | \$15,000.00                          |
| 2532226                      | 18898507    | Only injury         | \$29,000.00                          |
| <b>Loss of attention</b>     |             |                     | <b>Total Provision: \$186,400.00</b> |
| 2344113                      | 8740065     | Material and injury | \$15,700.00                          |
| 2345922                      | 18833553    | Material and injury | \$15,700.00                          |
| 2346053                      | 18857161    | Material and injury | \$15,700.00                          |
| 2429559                      | 18864825    | Material and injury | \$15,700.00                          |
| 2434489                      | 18858289    | Material and injury | \$16,900.00                          |
| 2450828                      | 18752899    | Material and injury | \$15,700.00                          |
| 2461394                      | 18875773    | Material and injury | \$15,700.00                          |
| 2484369                      | 18885529    | Material and injury | \$15,700.00                          |
| 2514869                      | 18893121    | Material and injury | \$20,200.00                          |
| 2525061                      | 8642005     | Material and injury | \$15,700.00                          |
| 2534667                      | 18899299    | Material and injury | \$15,700.00                          |

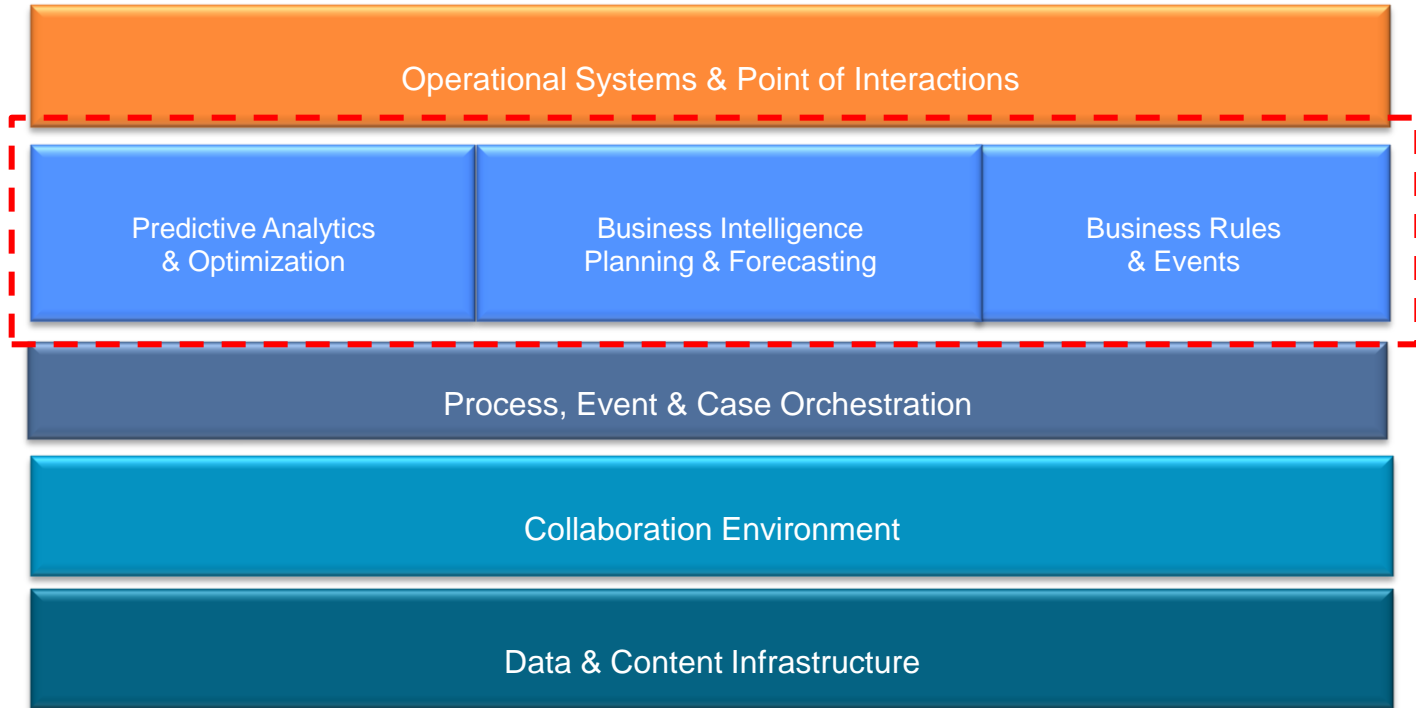


# DEMONSTRATION



# IBM Leads in Transformation

Key Technologies  
for optimizing  
the point of  
Interaction





# Transformation is Limited Only By Your Creativity

*Reduce Maintenance costs for truck fleets?*

*Identify Store Locations?*

*Recruit the best employees?*

*Reduce fraudulent claims?*



*Choose the right Product Features?*

*Optimize Campaign Effectiveness ?*

*Reduce Border incursions*

*Retain Frequent Flyers?*

*Catch smugglers?*

*Reduce Churn?*

*Prevent crime?*

*Optimize product mix?*







# Thank You! Questions?

- When you get home – identify a business objective where you care about the results.
- Identify the limiting factor of the decisions – the problem inherent to the objective.
- Identify WHO makes decisions which impact this business problem – cover strategic, tactical and operational perspectives
- Take a skills inventory of the people who impact your decisions.
- Understand which questions can only be answered by your analytic experts – what would happen if those people didn't come to work tomorrow?





Backup content on the 7 steps






# Thank You!

## Your Feedback is Important to Us

- Access your personal session survey list and complete via SmartSite
  - Your smart phone or web browser at: [iodsmartsite.com](http://iodsmartsite.com)
  - Any SmartSite kiosk onsite
  - Each completed session survey increases your chance to win an Apple iPod Touch with daily drawing sponsored by Alliance Tech



**IBM Software**

**Rob Risany**  
Program Director, Enterprise Solutions

+1-312-651-3408  
[rrisany@us.ibm.com](mailto:rrisany@us.ibm.com)

