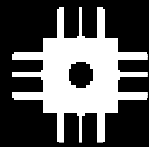


# The Analytical Revolution

Colin Shearer  
Global Executive, Advanced Analytic Solutions  
IBM



# Our world is becoming smarter



Instrumented



Interconnected



Intelligent

enabling organizations to make  
faster, better-informed decisions

With this change comes an explosion in information ...

... Yet organizations are operating with blind spots



### Lack of Insight

1 in 3 managers frequently make critical decisions without the information they need



### Inefficient Access

1 in 2 don't have access to the information across their organization needed to do their jobs

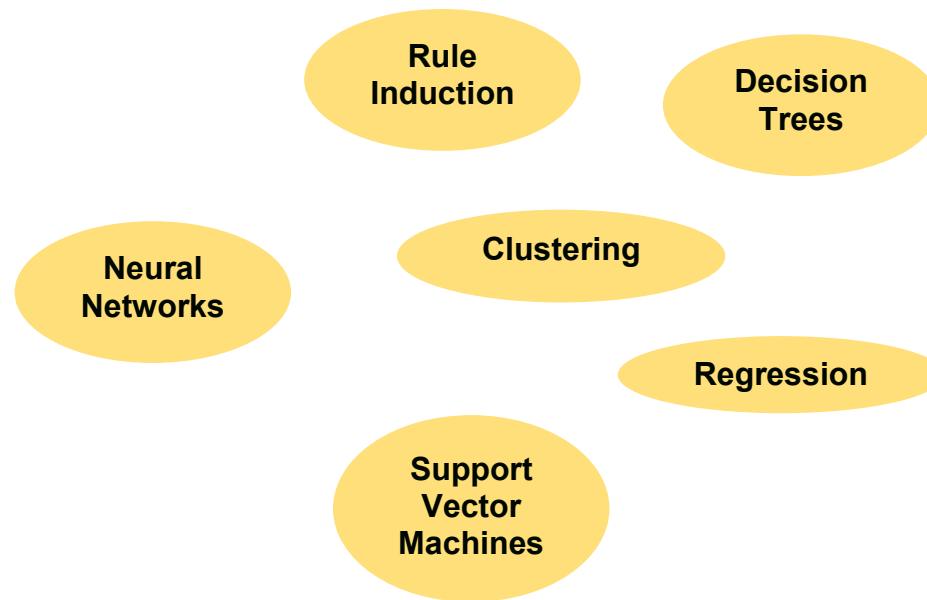


### Inability to Predict

3 in 4 business leaders say more predictive information would drive better decisions

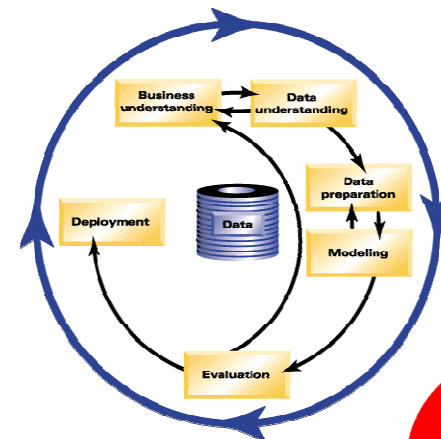
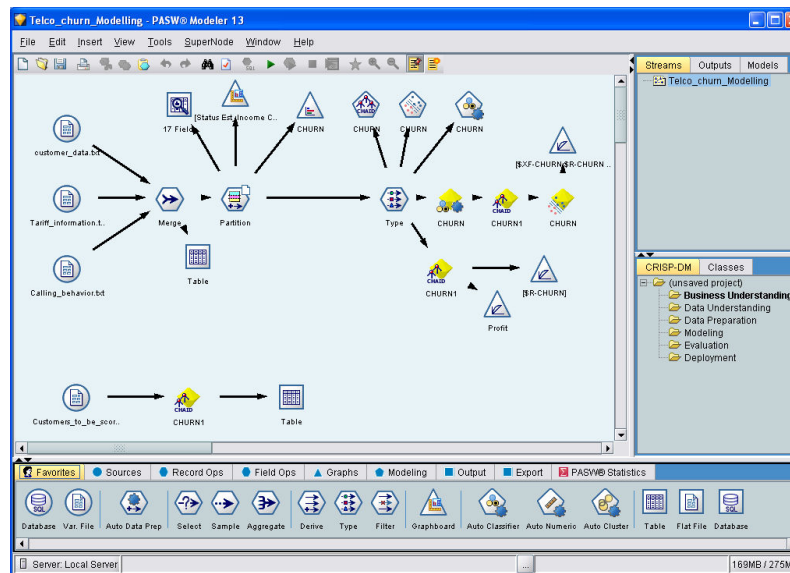
## Predictive Analytics Evolution

**1<sup>st</sup> Generation:**  
It's all about the  
algorithms



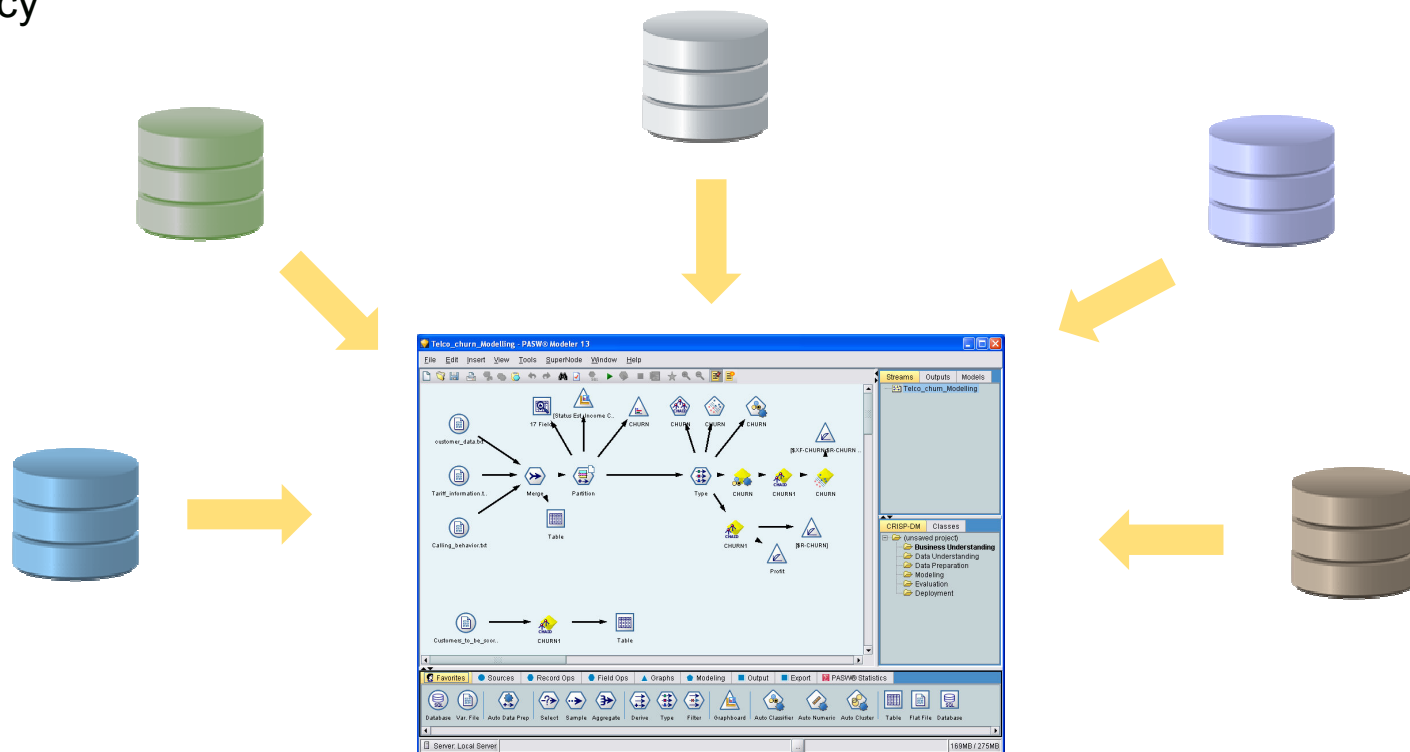
# Predictive Analytics Evolution

**2<sup>nd</sup> Generation:**  
It's about the process



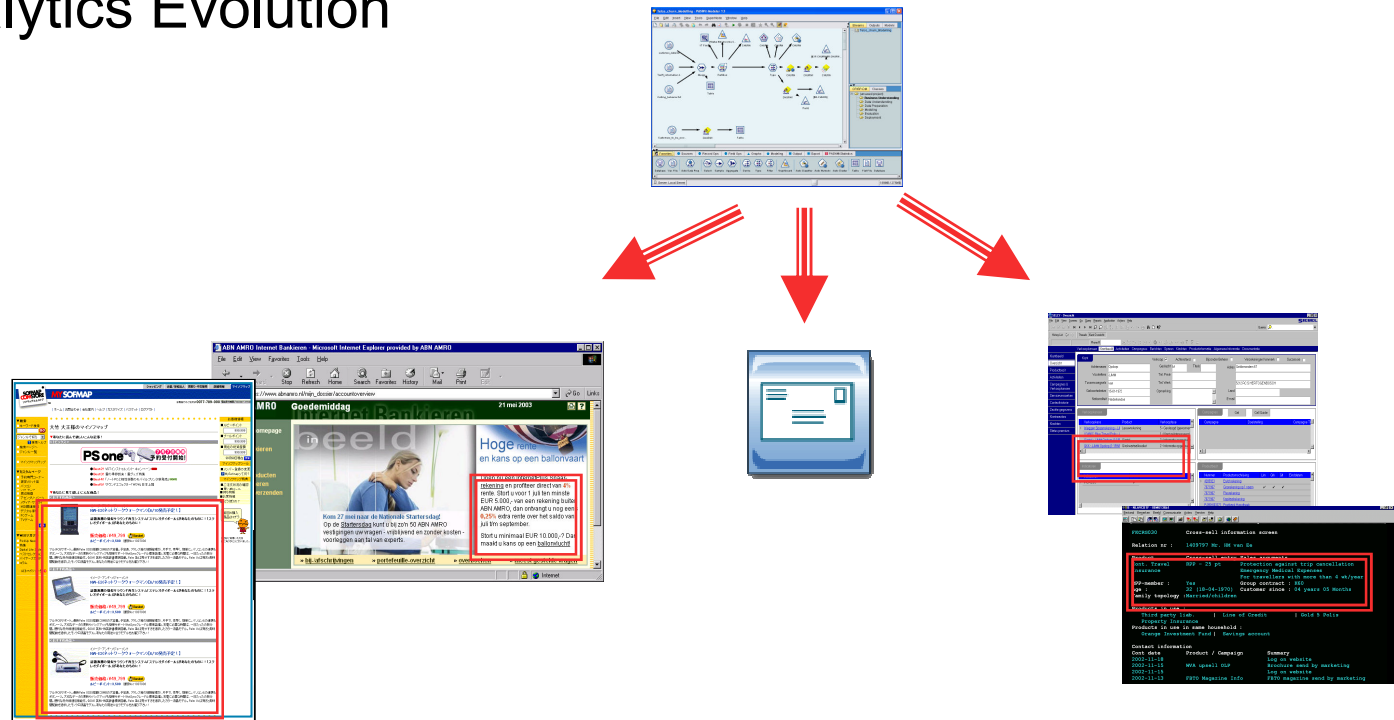
# Predictive Analytics Evolution

**3<sup>rd</sup> Generation:**  
 More data sources for deeper insights and greater accuracy

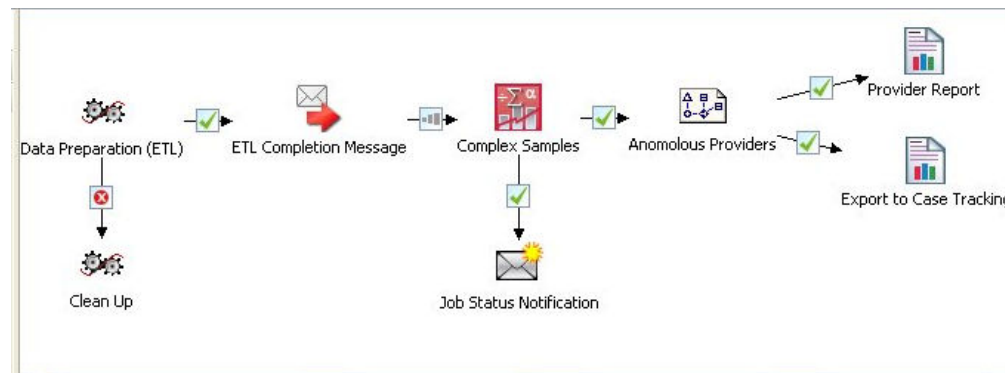


# Predictive Analytics Evolution

**4<sup>th</sup> Generation:**  
Deployment focus



**5<sup>th</sup> Generation:**  
Automation and  
“Industrialization”



## Predictive Analytics Evolution

**4<sup>rd</sup> Generation:**  
Deployment focus

**5<sup>th</sup> Generation:**  
Automation and  
“Industrialization”

*Key to delivering  
business value*



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# Keys to revolutionising Predictive Analytics

Automation

Deployment

**Operational Analytics**

# Operational Analytics: Automation of Analytical Processes

# The issues

- Where do analysts spend their time?

Assessing new analytical projects

Building new models

Monitoring model  
performance

Repeating typical  
data prep

Exploring improved  
analysis and modeling  
approaches

Updating/refreshing  
models

# The issues

- Where do analysts spend their time?

## Assessing new analytical projects

**Building new models**

Monitoring model performance

Repeating typical data prep

**Exploring improved analysis and modeling approaches**

Updating/refreshing models

*These deliver the greatest value...*

# The issues

- Where do analysts spend their time?

Assessing new analytical projects

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**Monitoring model performance**

**Repeating typical data prep**

Exploring improved analysis and modeling approaches

**Updating/refreshing models**

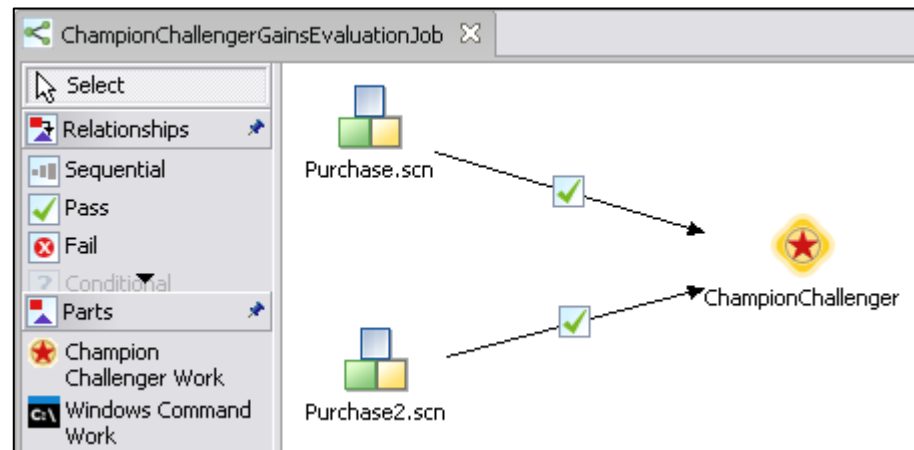
***...but these consume the most time***

## The issues

- How do we scale to meet requirements?
  - *“All of our branches have their own customer bases; local models would do better than a single centralised one”*
  - *“We’ve shown we can build demand forecasting models that give us potentially huge savings – but we’d have to forecast for tens of thousands of items!”*

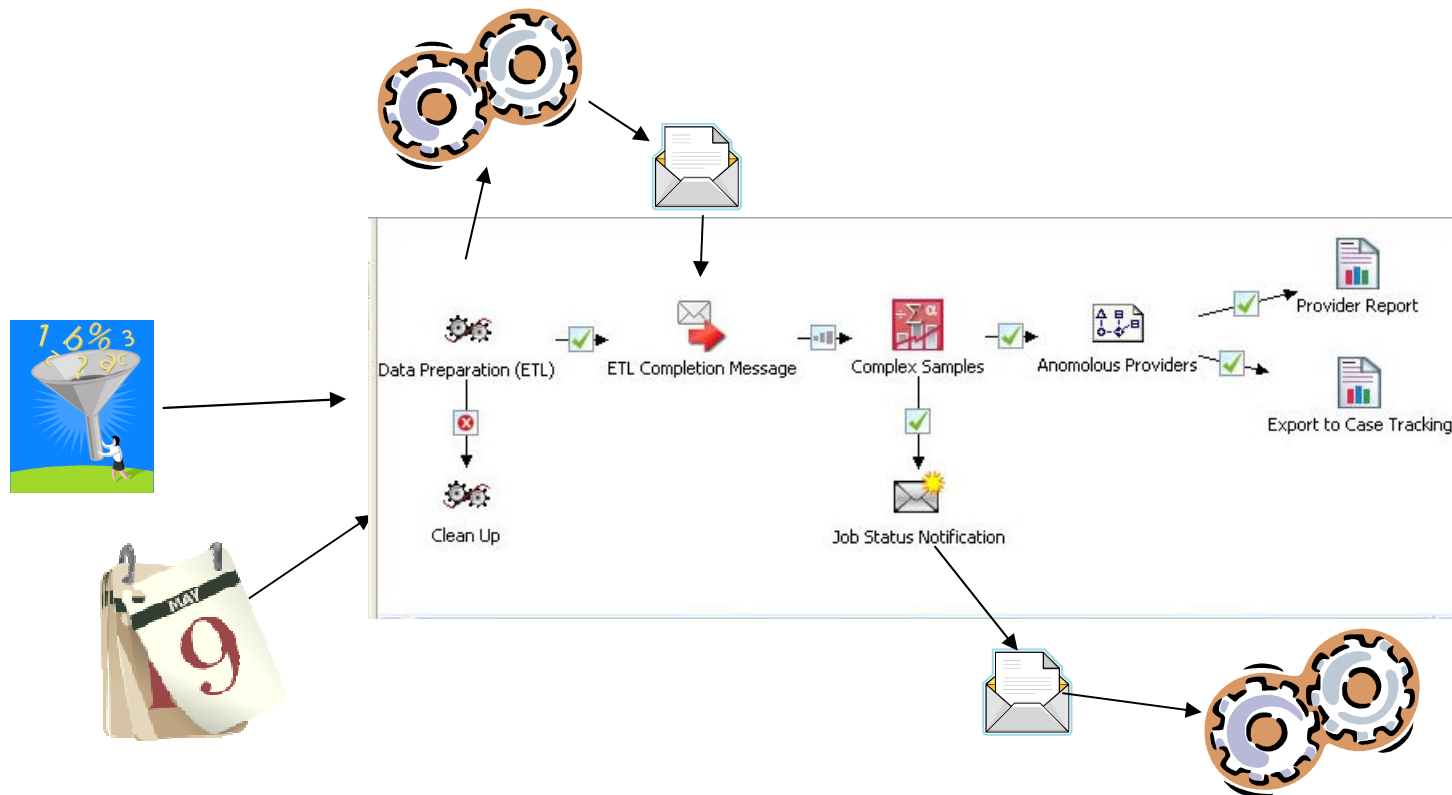
## The Operational approach

- Ability to automate analytical tasks
  - “Instant” for most common tasks
  - Able to automate the most complex processes
  - Schedule/run without human intervention



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- Ability to automate analytical tasks
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## Impact on Analysts

- Not de-skilling
- Focus on the tasks that require more skill and creativity
  - Tackle new analytical challenges
  - Design the processes which can be automated and replicated
- Frees analysts to be effective, productive and most valuable

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## Examples

- *Australian mobile telco provider*
- Model-targeted campaigns to prevent churn, stimulate increased usage, and cross-sell additional services
  - Analysts “owned” models they created, responsible for maintaining them
- Moving to more frequent, smaller campaigns
  - Increase number of models required
- Automated monthly rebuilding and scoring, implemented central management of assets and resources
- Results:
  - Campaigns more timely
  - Models always fresh and accurate
  - Analysts save 30 days per model per year

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## Examples

- *US police department*
- Needed to make effective and efficient force deployment decisions to reduce violent crime
- Automation to
  - Produce scores in real-time for each 4-hour shift
  - Capture new/emerging crime patterns by model refresh
- In first year of operation, reduced Aggravated Assault by 18% and Murder by 32%

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## New Horizons

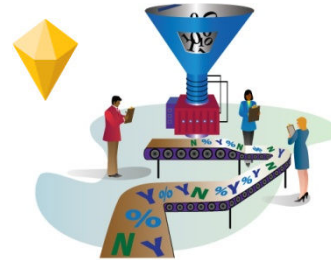
- Automation allows the application of analytics to be scaled *beyond the capacity of human-driven analysis*

# Operational Analytics: Deployment

# Degrees of Deployment



Visualization & Reporting



Batch Scoring



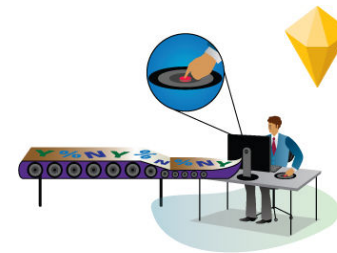
Optimized Decisions



Ad-hoc Discovery



Manual Scoring



Automating Decisions

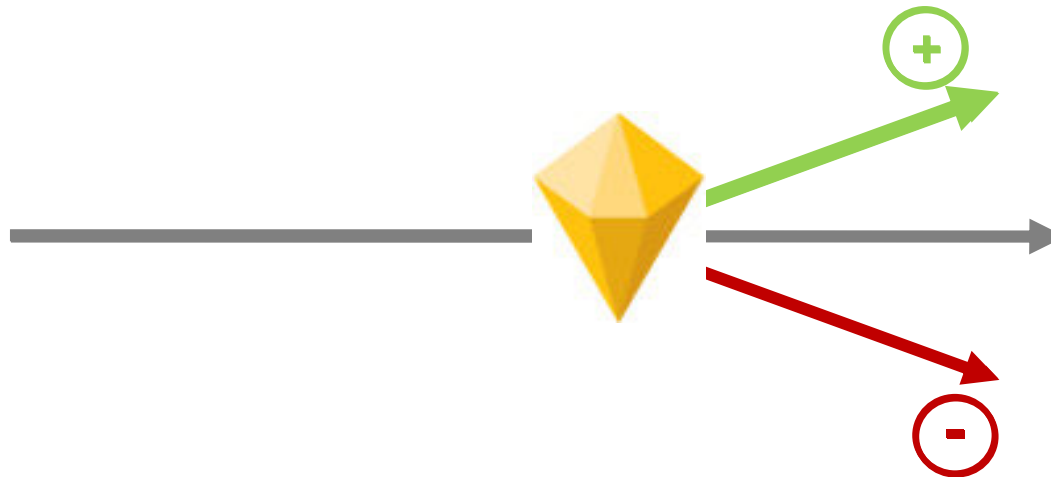


*Degree of integration with operational systems and processes*



## Delivering ROI through improved decision making

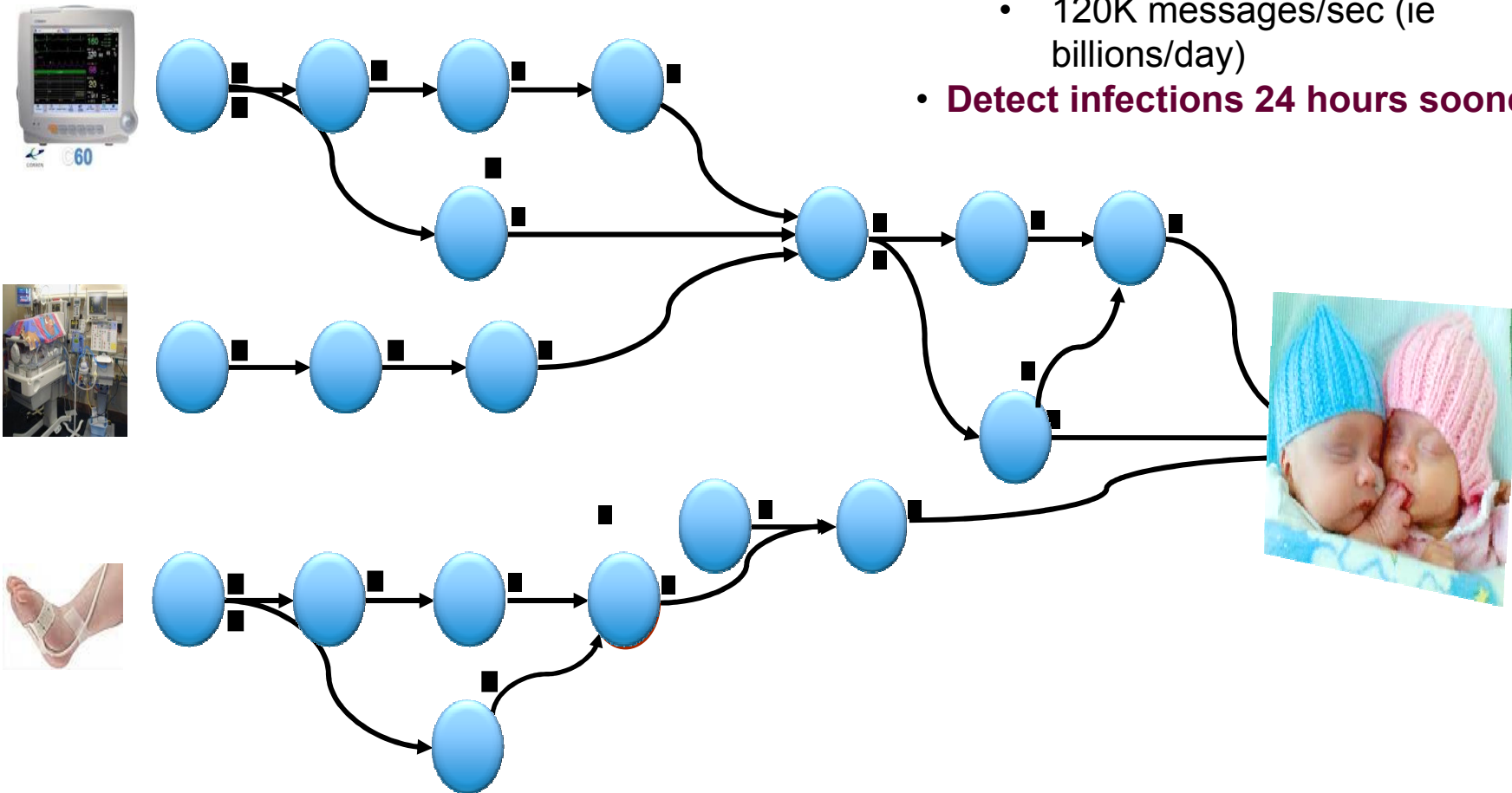
- Inserting “intelligence” at key decision points in business processes to improve outcomes – **and automate decisions**



# Decisions on Streaming Data



- Neonatal monitoring
  - 120 children monitored
  - 120K messages/sec (ie billions/day)
- **Detect infections 24 hours sooner**





Putting Predictive Analytics in the hands of  
the business users:

## **IBM Analytic Answers**

## IBM Analytic Answers

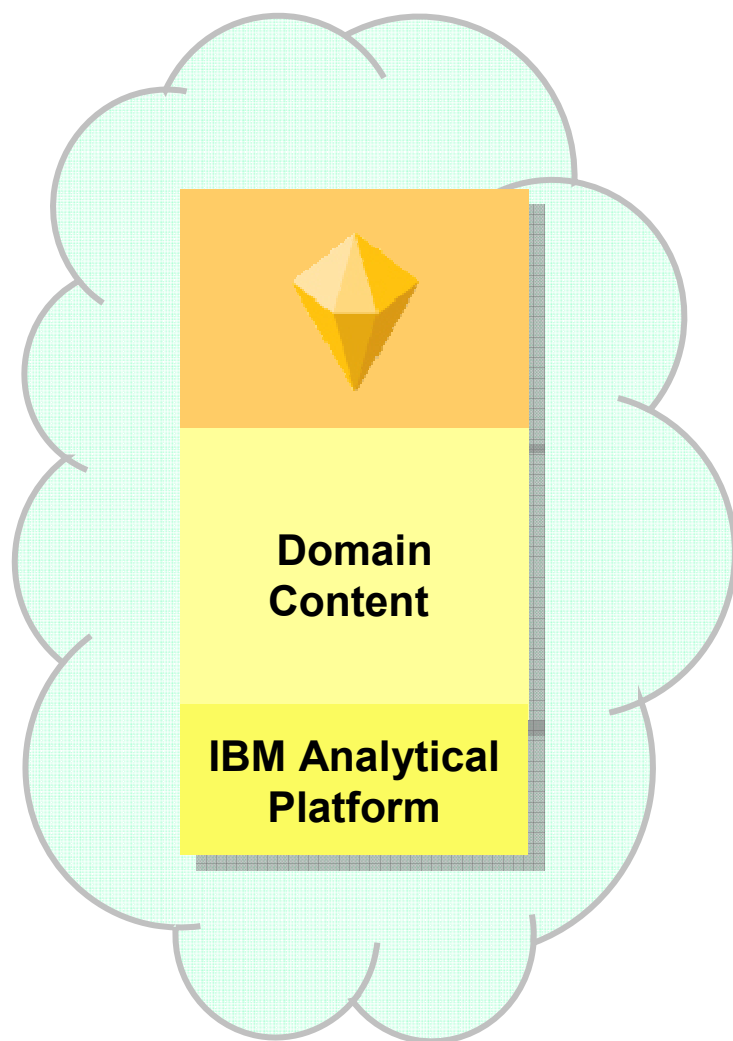
*A portfolio of **cloud-hosted solutions** that deliver directly-actionable predictive/prescriptive information to the line of business*

- Removes barriers to adoption of advanced analytics :



- Leverages IBM's deep analytics expertise but tailored to each client's business, using their data
- Built on IBM's analytic platform for unsurpassed scalability, analytical power, and performance
- No technical/analytical skills required
- Subscription based
- **Brings the power of advanced analytics to new users**

## IBM Analytic Answers: Advanced Analytic Solutions in the Cloud



***Tailored to each client's business,  
models built from their data***

***Embodies IBM's deep analytics expertise,  
knowledge and experience***

***Scalability, analytical power, and  
performance***

## Initial areas: IBM Analytic Answers for...

### Insurance Renewals



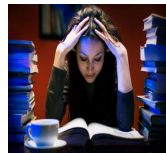
*Which of my insurance policy holders are unlikely to renew next month? How could I persuade each one to stay loyal?*

### Purchase Analysis & Offer Targeting



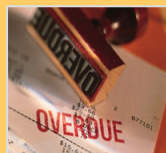
*Which products do my customers tend to buy together? Can I leverage that knowledge to create combination offers and promotions that increase basket size and revenue per customer visit?*

### Student Retention



*Which of our students are performing below their predicted potential? How should we intervene to get them back on track and avoid the possibility of their dropping out?*

### Prioritized Collections



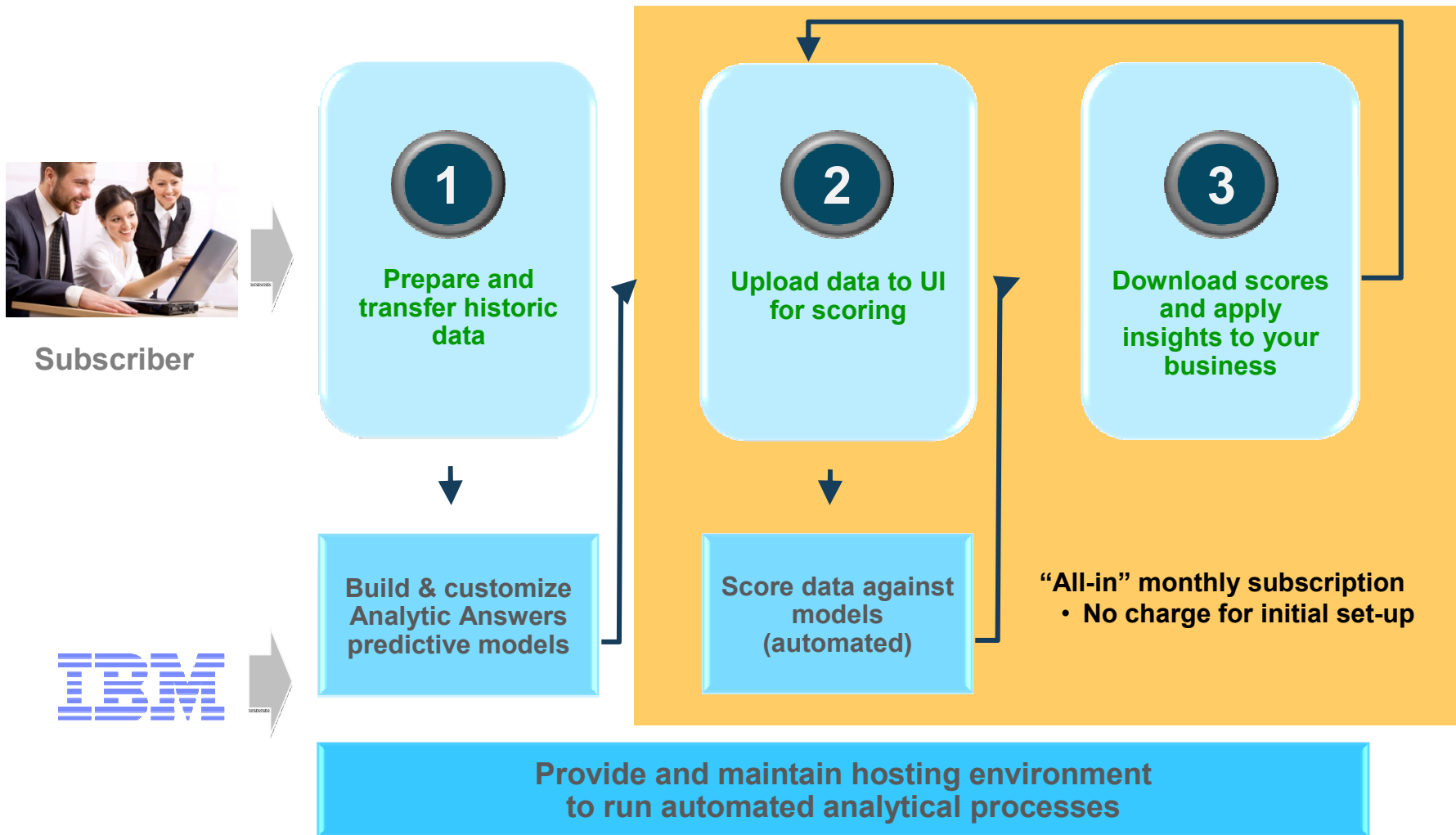
*Which of my overdue debtors are likely to pay? How much can I recover from them, and which treatment will be most effective for each?*

**Providing information that is  
actionable at the level of individual cases**

Demo:

**IBM Analytic Answers  
for Retail Purchase Analysis  
& Offer Targeting**

# Analytic Answers in three simple steps



Which revolutions had the most profound effect on history?

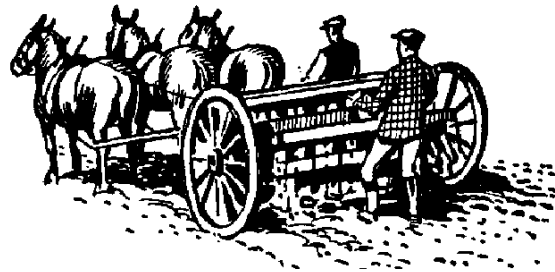
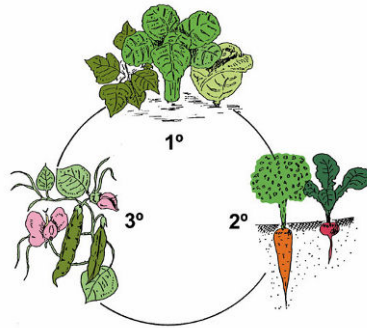
**“Spirit of ’76”?**



**“Liberté, Egalité et Fraternité”?**

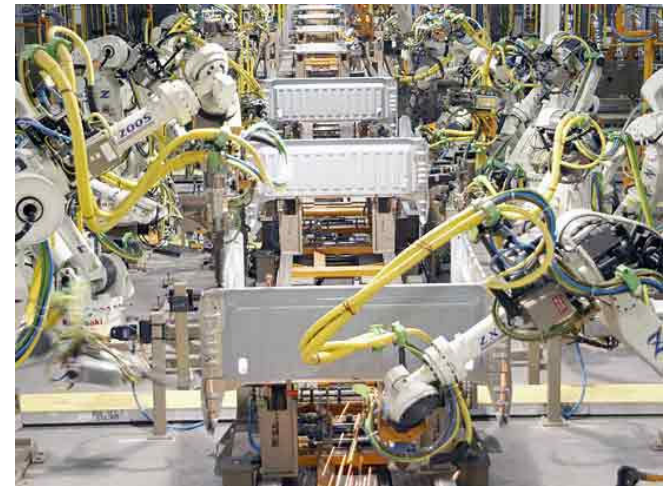
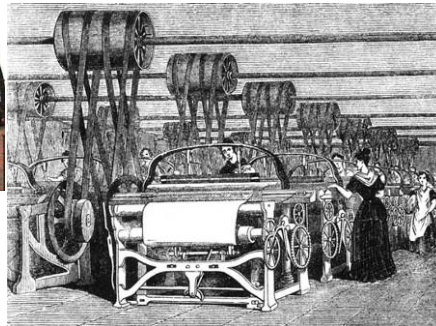
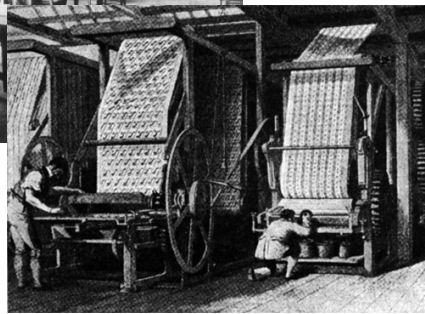


# The Agricultural Revolution – from ~1700





# The Industrial Revolution – from ~1780



What revolutions do for the world...



Agricultural Revolution



Industrial Revolution



***Scale the effects...***

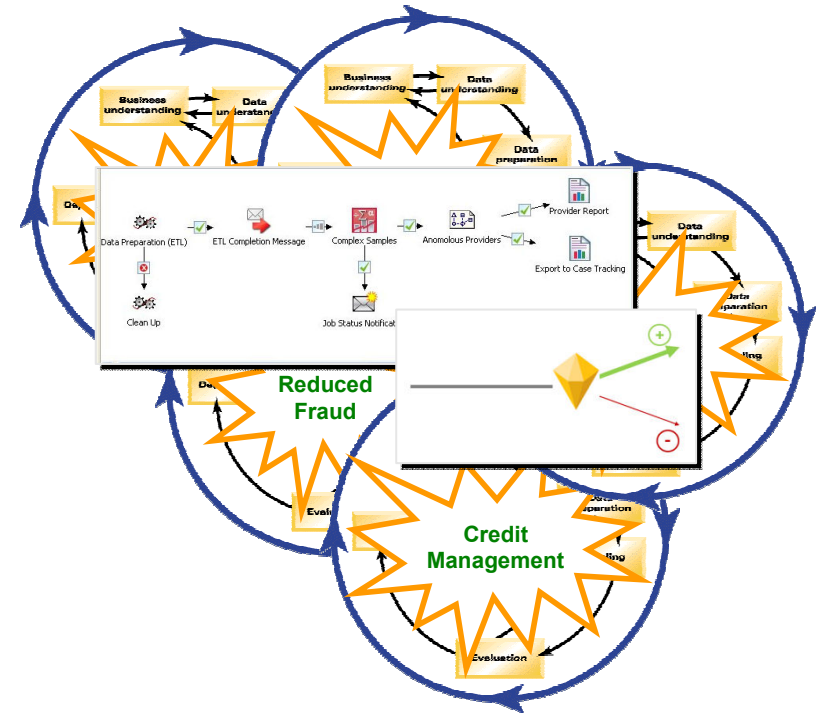
***...multiply the benefit...***

***...by orders of magnitude...***

***...and make a far broader range of consumers***

***able to benefit.***

What revolutions do for the world...



***Scale the effects...***

***...multiply the benefit...***

***...by orders of magnitude...***

***...and make a far broader range of consumers able to benefit.***

**Welcome to the Analytical Revolution.**

# Thank you!

