



Connect 2013系列活動

IBM軟體用戶體驗大會

關鍵密技、輕鬆變贏家





智慧分析，快人一步洞察商機

後資料倉儲時代！

精準分析資料精髓、創造商業高績效管理

主講人 許益誠

軟體事業處資深軟體顧問

商業智慧型企業目前共同面臨的資訊挑戰之一：

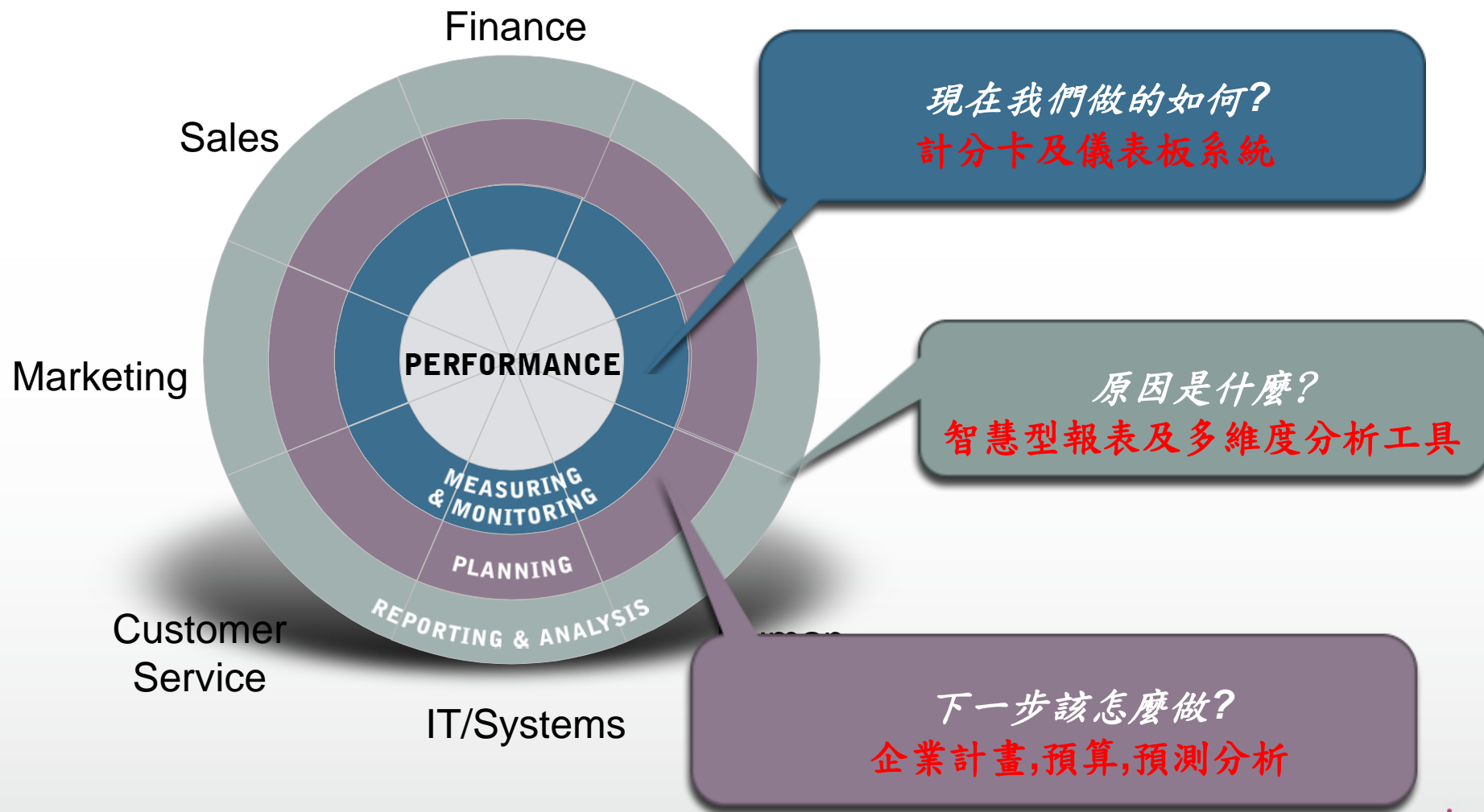
- 高階經理人無法及時掌握經營績效, 做出更快速的決策
- 目標與關鍵績效指標(KPI)無法和計畫結合, 做出更正確的決策
- 問題無法立即了解, 來針對狀況因應與調整

59% 的使用者
無法找到他們需要的
正確有用的訊息

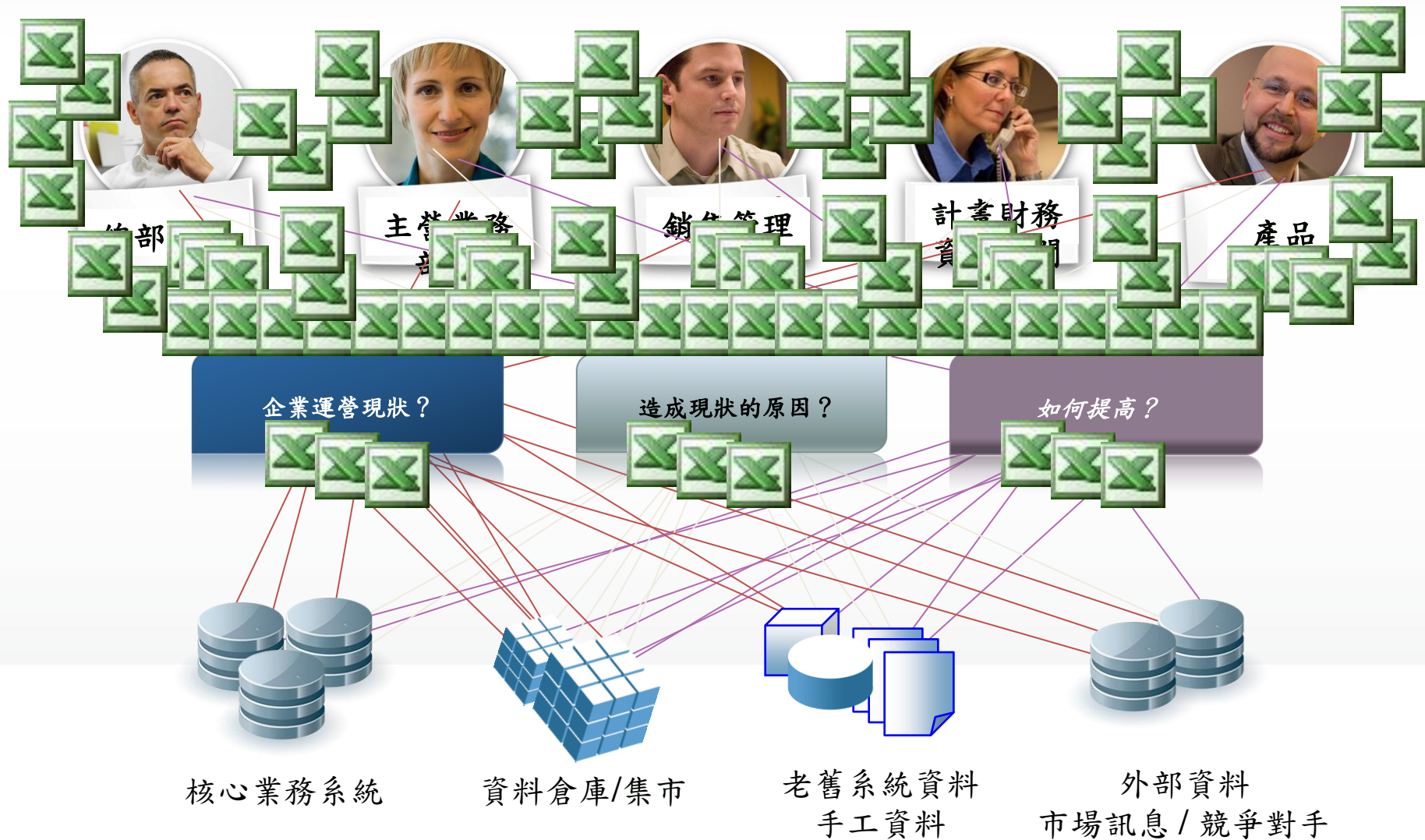
42% 的經理人
每週至少一次使用
錯誤的訊息做判斷

經理人每天至少
花費**2**小時來尋
找他們要的資訊

對於績效管理 老闆關心的三個問題



你所使用的方法?? (業務洞察力)

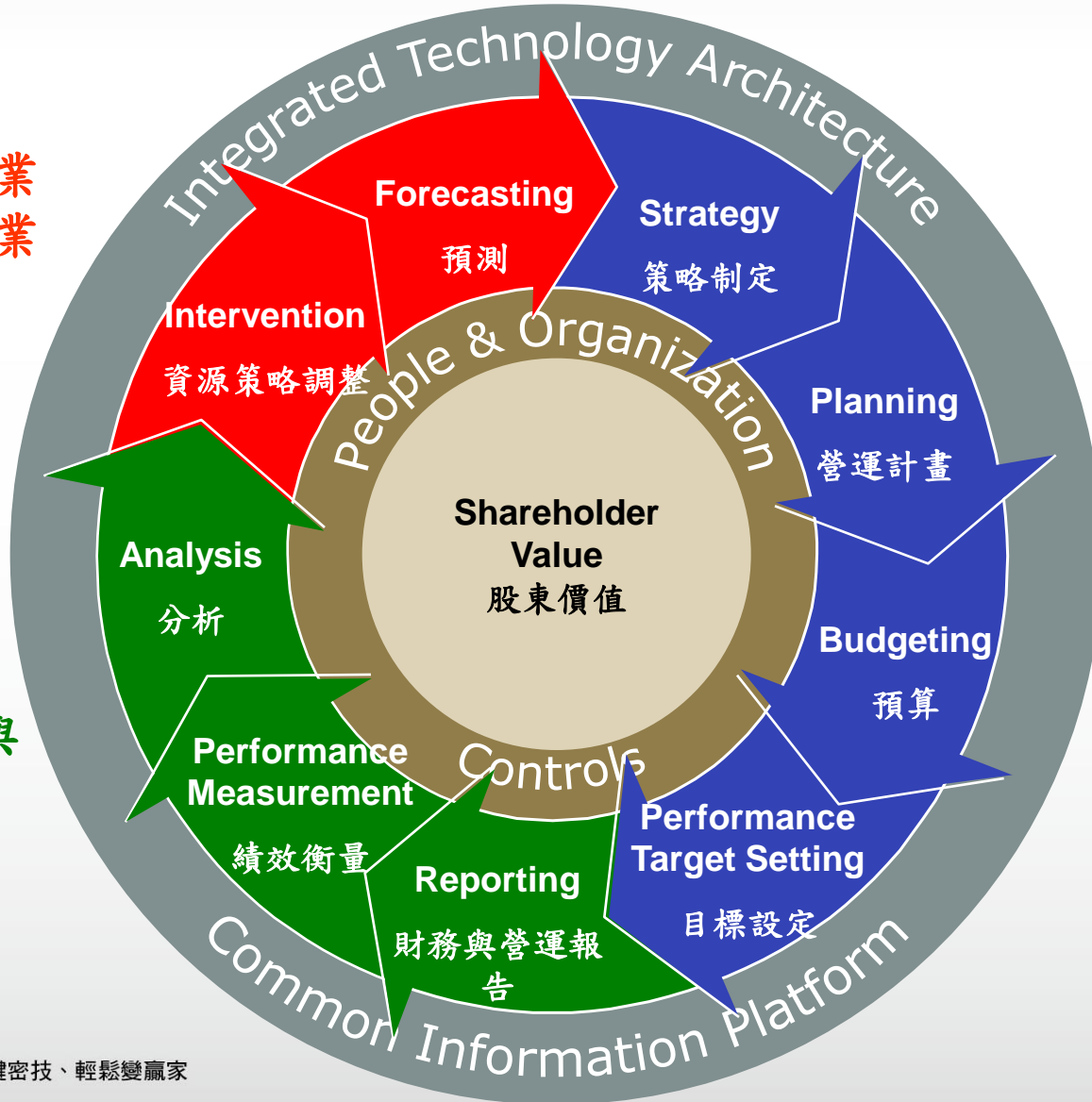


IBM觀點：高績效企業績效管理文化--回首過去&放眼未來

動態調整企業
目標增強企業
回應力

計畫與目標設定
結合公司策略發展

績效監控與
衡量



IBM 提供完整的商業智慧/績效管理解決方案以滿足



企業之需求



即時監控

財務報告合併

經營管理資訊分析

計分卡

趨勢預測與
統計分析

試算模擬

DASHBOARDS



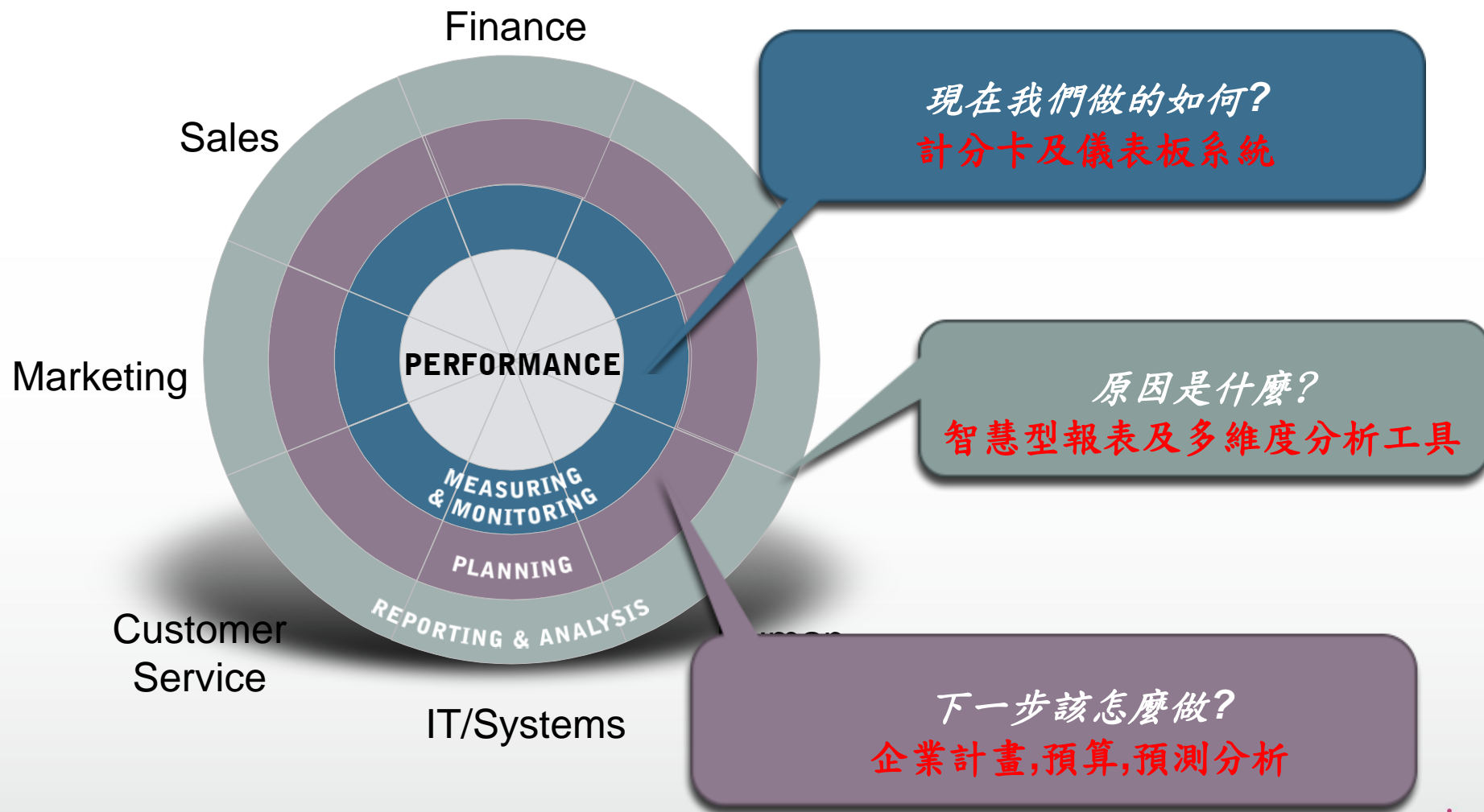
來自不同應用系統資料

主要業務交易資料

外部資料(Excel.)



對於績效管理 老闆關心的三個問題



IBM Cognos Connection

Sales & Operations Performance - IBM Cognos Connection

Sales & Operations Performance

Public Folders | My Folders | Sales & Operations Performance | Inventory Management

No filter | No grouping

	Name
■ ▼	On Time Customer Shipments →
◆ -	Forecast Accuracy - Operations →
◆ -	Inventory Obsolescence as a % of Total Inventory - Operations
◆ ▼	Unplanned Maintenance Downtime - Operations →
● -	Production Compliance - Operations →
● ▲	Committed Delivery Performance - Operations →

CAPACITY EXCEPTIONS

MEASURING & MONITORING

現在我們做的如何?

現況

趨勢

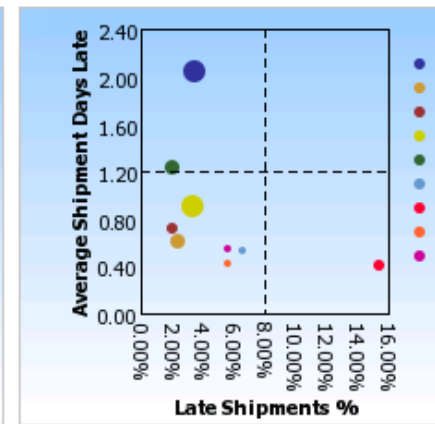
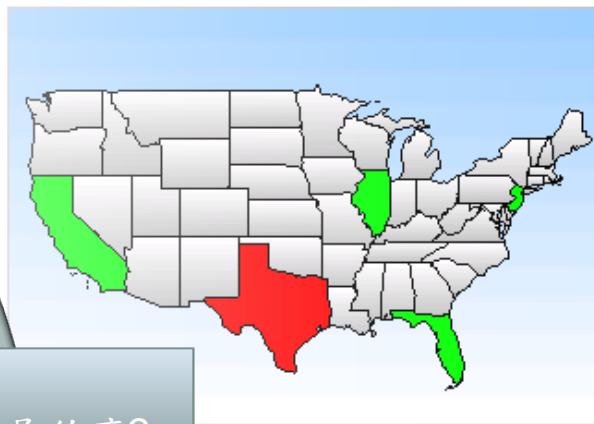
儀表板上的計分卡指標顯示：無法準時交貨， below plan

現在我們做的如何？

Plant Production



原因是什麼？



Plant	Comp. Name	Mat Req'd	Tot Mat. Ordered	Mat. Shortage Desc.
Houston, TX	Circuit Boards	22,825,208	43,074,732	
Jacksonville, FL	Computer Cases	12,783,836	40,521,303	
Master Planning	Electrical Connectors	89,655,906	199,800,000	
Melrose, NJ	Instrument Wiring	26,545,840	30,663,633	
Newark, NJ	Instrument Wiring	1,065,832	888,867	Yes
Santa Cruz, CA	LCD Monitors	0	41,344,732	

系統連結至相關報表及圖表：顯示紐澤西州生產設備短少

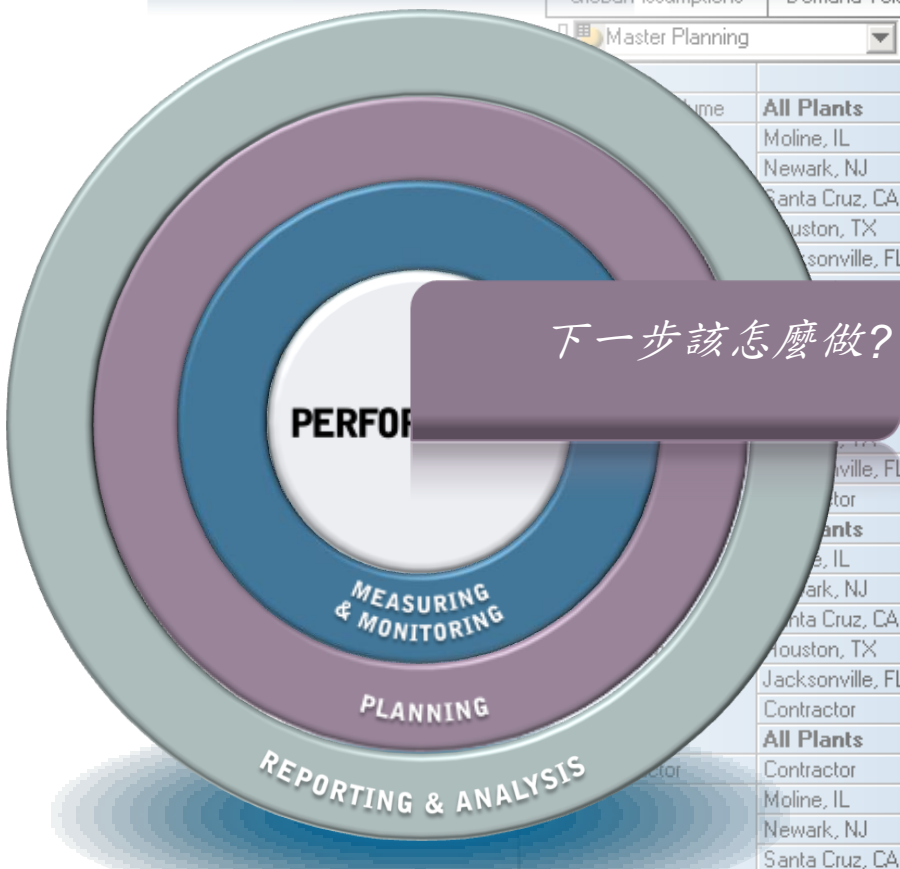
現在我們做的如何?

原因是什麼?

Global Assumptions | Demand Volume | Base Regional Breakdown | **Plant Production** | Contractor Volume Constraints | Contractor

Master Planning | Strategic Accounts | Game Console

	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07
All Plants	5,375	5,745	5,145	5,145	6,197	7,016	7,956	
Moline, IL	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Newark, NJ	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Santa Cruz, CA	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Houston, TX	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Jacksonville, FL	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Contractor	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
All Plants	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Moline, IL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Newark, NJ	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Santa Cruz, CA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Houston, TX	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Jacksonville, FL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Contractor	0.00%	0.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
All Plants	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Moline, IL	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Newark, NJ	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Santa Cruz, CA	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Houston, TX	20.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Jacksonville, FL	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
Contractor	0.00%	0.00%	20.00%	20.00%	20.00%	20.00%	20.00%	
All Plants	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Contractor								
Moline, IL	1,075	1,140	1,029	1,029	1,239	1,403	1,591	
Newark, NJ	1,075	1,140	1,029	1,029	1,239	1,403	1,591	
Santa Cruz, CA	1,075	1,140	1,029	1,029	1,239	1,403	1,591	



模擬未來若增加20%設備，對公司獲利率影響

模擬不同狀況檢視生產設備支出計畫來了解對企業的影響，重新調整設備需求數量來解決問題

績效管理報表平台



簡單易用的統一工作區域

Drag-and-drop content

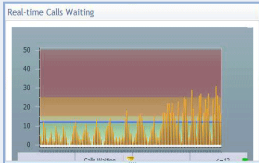
Reports & Analysis
報表呈現



TM1 Cubes
模擬試算

Category	Q1-2008	Q2-2008	Q3-2008	Q4-2008	YTD-2008
Revenue	118,200	110,000	115,000	120,000	463,200
Cost	70,000	68,000	72,000	75,000	285,000
Profit	48,200	42,000	43,000	45,000	178,200

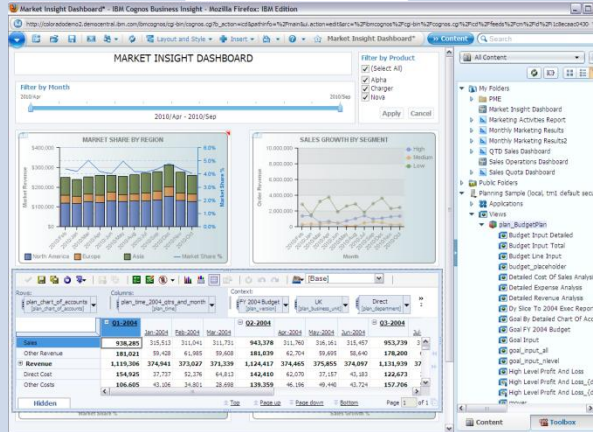
Real-Time Monitoring
即時監控



Metrics KPI 管理

Name	Actual	Target	Variance	Variance %	Time Period
Productivity	81.27%	74.43%	6.84%	9.2%	8/24/2008
Customer Service	71.75%	70.15%	1.60%	2.3%	7/16/2008
Revenue Growth	238	200	+38	+19%	6/30/2008
Market Share	446	400	+46	+11.5%	6/30/2008
Quality Score	2,241,709	1,892,805	348,904	18.4%	6/30/2008
Operational Efficiency	3.9%	5.9%	-2.0%	-33.9%	4/30/2008
Customer Satisfaction	6	10	-4	-40%	2/28/2008
Employee Retention	2	15	-13	-87%	2/28/2008

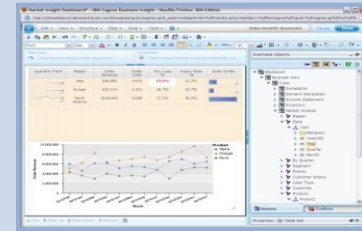
Business Insight



Unified BI workspace

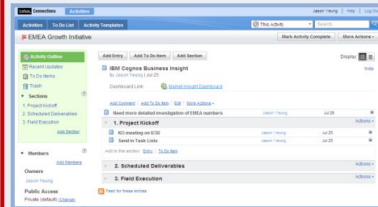
Do More...

Exploration & Analysis with
Business Insight Advanced



自主修改

Social Collaboration with
Lotus Connections



協同作業
與lotus
整合

US Sales Dashboard



- Overview
- Market Analysis
- Sales Pipeline
- Distribution

KEY METRICS

- Alpha
- Charger
- Nova

\$61 M
Inquiry Revenue

\$330 M
Market Revenue

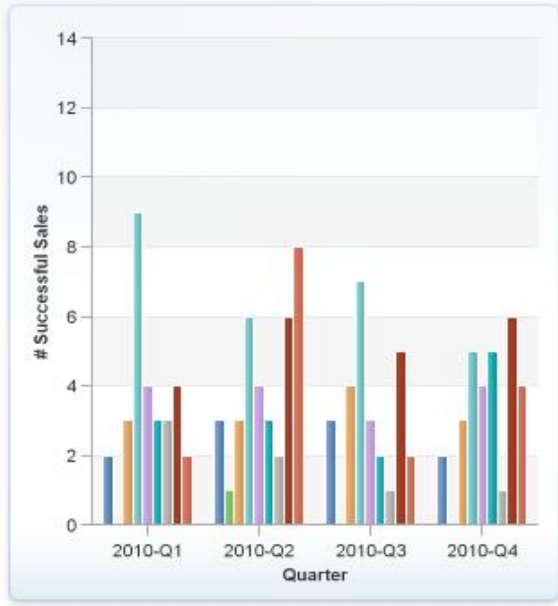
\$25 M
Order Revenue

6.2%
Market Share

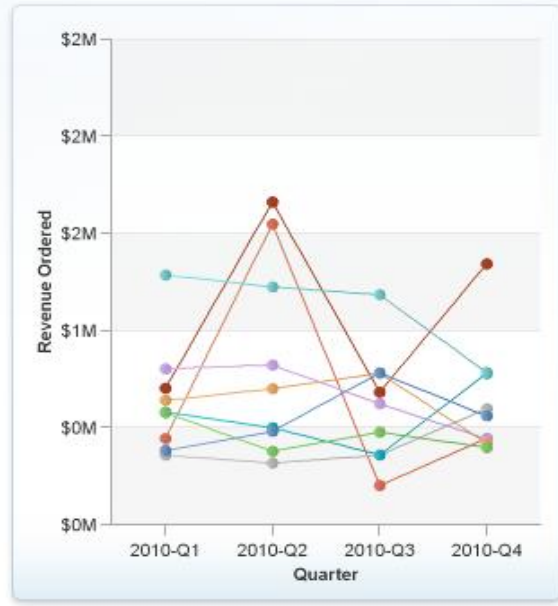
-27.7%
Sales Growth

40.2%
Win / Loss

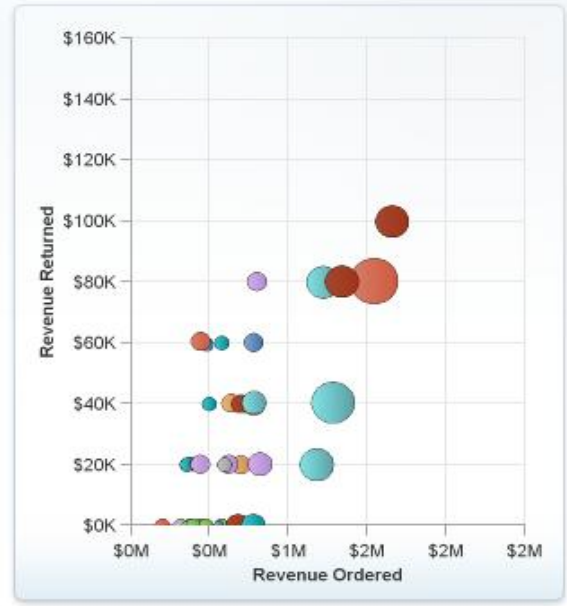
SUCCESSFUL SALES



REVENUE ORDERED



REVENUE ORDERED VS RETURNED



- C.D.I. Technology
- GreenCo Technology
- GulfMex Systems
- Powertron Inc.
- Ranger Inc.
- Southern Scientific
- Systema Latina
- West Coast Solutions
- Workstation Int'l

RECENTLY CLOSED DEALS

...ed **\$988,130** (74 units - Ship to Hold - 2010 Sep) **GulfMex Systems** ordered **\$1,322,141** (105 units - Ship to Hold - 2010 Oct) **Northstar Systems** ordered **\$1,224,931** (10

利用燈號快速了解績效

The screenshot displays the Cognos Metric Studio interface for a 'Retail Risk Scorecard'. The main table lists various metrics with columns for Name, Actual, Target, Variance, Variance %, and Time Period. Each metric is accompanied by a trend indicator (light bulb icon) and a color-coded status (red for negative, green for positive, yellow for neutral). Three yellow callout boxes highlight specific features: '現況' (Current Status) points to the trend indicator, '趨勢' (Trend) points to the color-coded status, and '附檔' (Attachment) points to a folder icon in the table.

Name	Actual	Target	Variance	Variance %	Time Period
Average Loan Size	US\$68,921.47	US\$104,328.22	-US\$35,406.75	33.94%	2002, Q4, Dec
Average Line (Revolving)	US\$20,326.34	US\$21,984.09	-US\$1,657.75	7.54%	2002, Q4, Dec
# of Accounts Booked	1,088	2,496	-1,408	56%	2002, Q4, Dec
Average Loan to Value	45.77%	62.27%	-16.50%	26.50%	2004, Q4, Dec
Exposure At Default (EAD)	US\$67,934,277,904	US\$75,000,000,000	-US\$7,065,722,096	9%	2004, Q4, Dec
Expected Losses (EL)	US\$89	US\$100	-US\$11	11%	2004, Q4, Dec
Loss Given Default (LGD)	35.64%	30.00%	5.64%	18.81%	2004, Q4, Dec
Probability Of Default (PD)	24.03%	25.00%	-0.97%	3.88%	2004, Q4, Dec
Foreclosures	US\$846,529	US\$1,000,000	-US\$153,471	15%	2004, Q4, Dec
Reposessions	US\$13,124.52	US\$25,721.14	-US\$12,596.62	48.97%	2002, Q4, Dec
Forebearances	US\$21,299.38	US\$22,624.34	-US\$1,324.96	5.86%	2002, Q4, Dec
Restructures	US\$9,788.29	US\$9,707.26	US\$81.03	0.83%	2002, Q4, Dec
Recoveries	US\$9,663.92	US\$12,617.53	-US\$2,953.61	23.41%	2002, Q4, Dec
Contractual Chargeoffs	US\$101	US\$100	US\$1	1%	2004, Q4, Dec
Bankruptcy Chargeoffs	US\$103	US\$100	US\$3	3%	2004, Q4, Dec
Repo Chargeoffs	US\$792,660	US\$500,000	US\$292,660	59%	2004, Q4, Dec
# of Accounts Closed/Paid Off	460,023.04	311,731.00	148,292.04	47.57%	2004, Q4, Dec
Delinquent 0-29 Days (DPD)	9,557.70	10,688.20	-1,130.50	10.58%	2004, Q4, Dec
Delinquent 30-59 Days (DPD)	9,483.15	8,033.00	1,450.15	18.05%	2004, Q4, Dec
Delinquent 0-60 Days 2P (DPD)	22,983.44	21,498.00	1,485.44	6.91%	2004, Q4, Dec
Delinquent 60-89 Days (DPD)	26,368.85	19,898.40	6,470.45	32.52%	2004, Q4, Dec
Delinquent 90-119 Days (DPD)	20,720.83	21,247.00	-526.17	2.48%	2004, Q4, Dec
Delinquent 120-149 Days (DPD)	55,967.09	48,162.00	7,805.09	16.21%	2004, Q4, Dec
Delinquent 150-179 Days (DPD)	69,827.58	43,831.00	25,996.58	59.31%	2004, Q4, Dec
Delinquent 180+ Days (DPD)	101,990.96	47,308.00	54,682.96	115.59%	2004, Q4, Dec

利用關聯找出正確原因

Metric Studio | Dec 2005 | View | Preferences | Tools | Help

Scorecards > Vertical Industry > Financial Services > Banking > Metric Types > ROA

Consumer Loans ROA | History | Actions | Reports | Diagrams | Details

Status	Trend	Actual	Target	Variance	Owner	Last updated
■	▼	3.61%	3.81%	-0.20%	Administrator	Feb 6, 2006

Impact Diagram

```

    graph LR
      CC_Basic[ROA - Credit Card - Basic] --> CC_Gold[ROA - Credit Card - Gold]
      CC_Gold --> CC[ROA - Credit Card]
      CC_Platinum[ROA - Credit Card - Platinum] --> CC
      HELOC[ROA - HELOC] --> CLROA[Consumer Loans ROA]
      Installment[ROA - Installment] --> CLROA
      Mortgage_1YR[ROA - Mortgage - 1 YR ARM] --> Mortgage[ROA - Mortgage]
      Mortgage_15YR[ROA - Mortgage - 15 YR FRM] --> Mortgage
      Mortgage --> CLROA
      CLROA --> CLROA
  
```

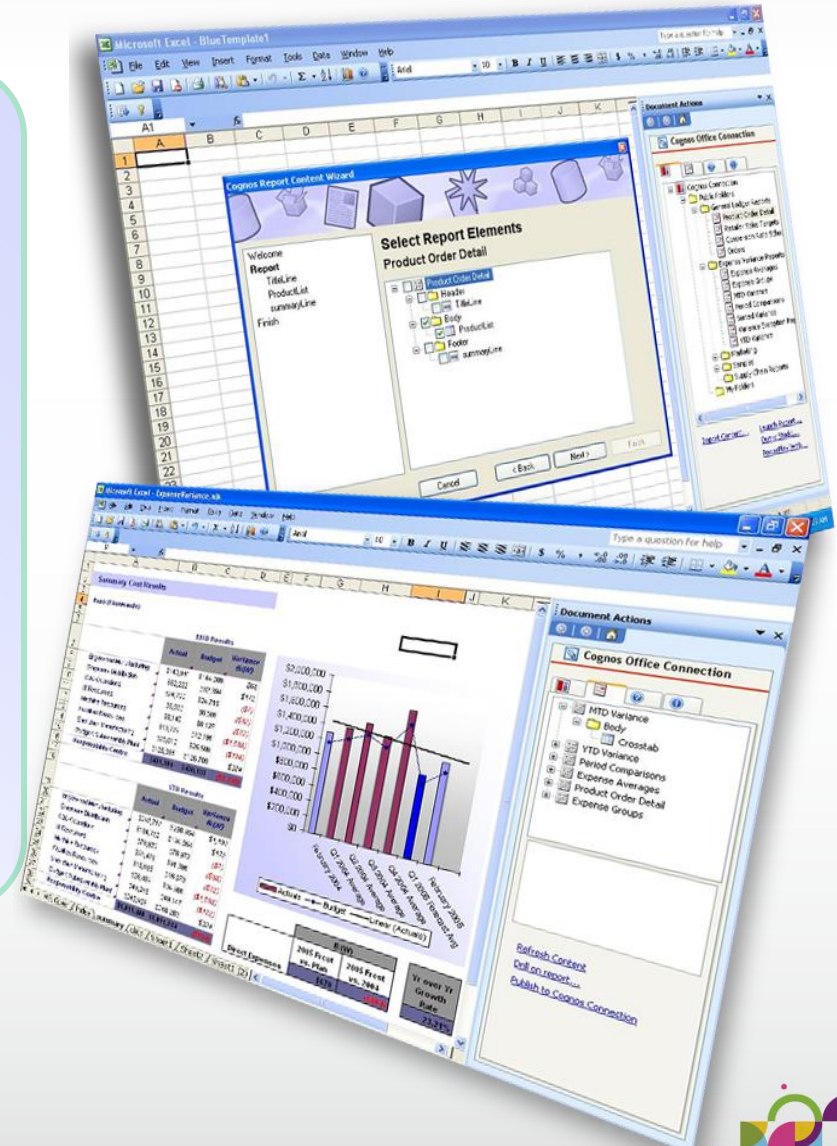
Available Diagrams

<input type="checkbox"/>	Name	Description	Actions
<input checked="" type="checkbox"/>	Impact Diagram	Impact Diagrams show explicit and implicit cause-effect relationships between metrics	

Done | Local intranet

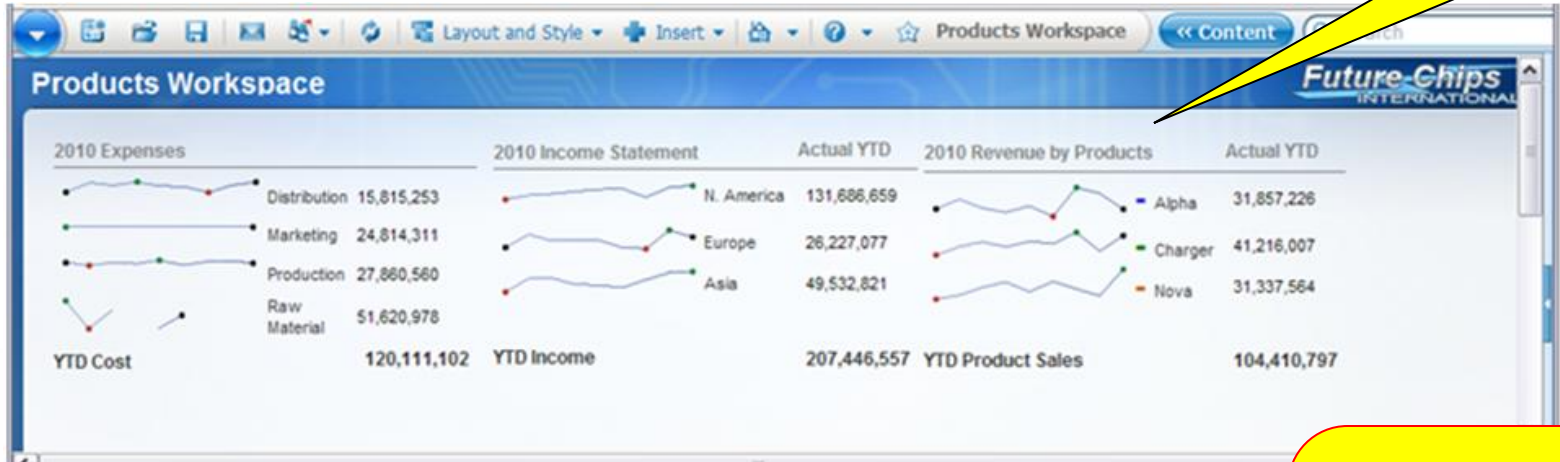
完整的Office整合

- 透過Microsoft Excel、Word、PowerPoint去連結報表資訊
- 使用者可以透過Excel進行OLAP分析，並可隨時更新資料
- 在Word與PowerPoint即時更新圖表資訊
- 設定簡易，使用者可自行設定安裝
- 使用者製作的Excel、Word、PowerPoint可直接發佈到Cognos 10的Server上與其它使用者共享



協同作業，知識不漏接

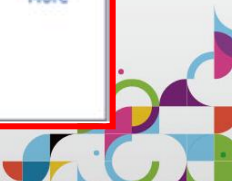
儀表版



Dashboard Activities

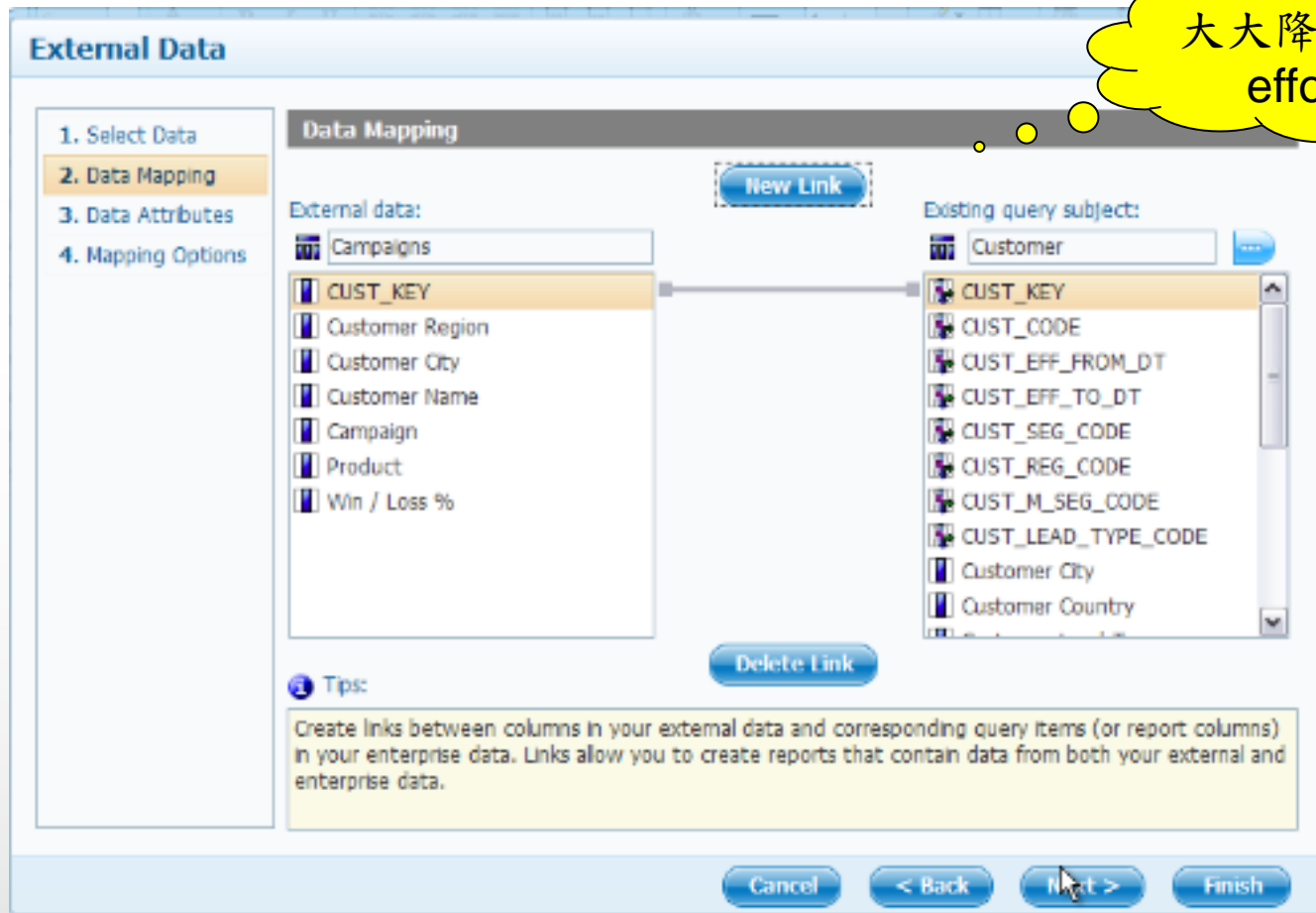
- Sales Team Reallocation Decision**
 Bob Business added Fred Analyst as a member Yesterday 3:05 PM
 Bob Business created entry "Sales Forecast" Yesterday 1:58 PM
 Bob Business created entry "IBM Cognos Business Insight" Yesterday 1:51 PM
 To determine if it would benefit Future Chips to reallocate other sales teams to start selling Nova in high-growth markets
- Nova Growth Slowing?**
 Bob Business created entry "Please investigate" Yesterday 1:32 PM
 Bob Business created entry "Temporary compensation blitz" Yesterday 1:31 PM
 Bob Business added Erica Exec as a member Yesterday 1:30 PM
 Increase Nova growth by 10% next quarter
- Revenue Over Last Quarter and Marketing Pipeline**
 updated by Vjay Nehry Yesterday 10:47 AM [More](#)
- Alpha Sales Fantastic! How Could We Replicate This?**
 updated by Betty Zechman Yesterday 10:27 AM [More](#)

呈現出過去曾針對此儀表版，提出的議題...



外部資料連結，超乎彈性

當臨時需要新增資料來源時，不需更動底層資料庫，可直接在COGNOS上，連結資料來源



豐富且多樣的離線儀表板功能

Benefits

- 加速決策
- 離線分析, 提昇效能
- 不需重複設計分析
- 降低系統負荷



行動報表解決方案

- Extended platform support
- Enhanced Blackberry design to support touch gestures
- Author once, use many times
- Full Enterprise support

iPhone®



BlackBerry®



iPad®



Symbian



Windows Mobile



現在我們做的如何？

原因是什麼？



Predictive Analytics



您可以有更科學的決策支援...資料採礦分析，提昇預測準度

Predictive Analytics

Predictive Analytics helps connect **data** to effective **action** by drawing reliable conclusions about **current conditions** and **future events**.

— Gareth Herschel, Research Director, Gartner Group

Predictive analytics

From Wikipedia, the free encyclopedia

Predictive analytics encompasses a variety of techniques from **statistics**, **data mining** and **game theory** that analyze current and historical facts to make predictions about future events.

In business, predictive models exploit patterns found in historical and transactional data to identify risks and opportunities. Models capture relationships among many factors to allow assessment of risk or potential associated with a particular set of conditions, guiding decision making for candidate transactions.



“挖掘資料” - 預測分析的迷思

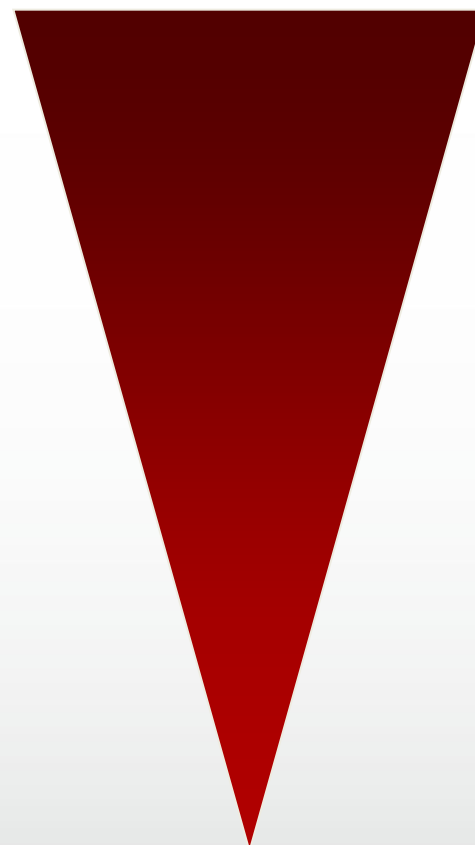
Top-Down Approaches:

查詢,彙總

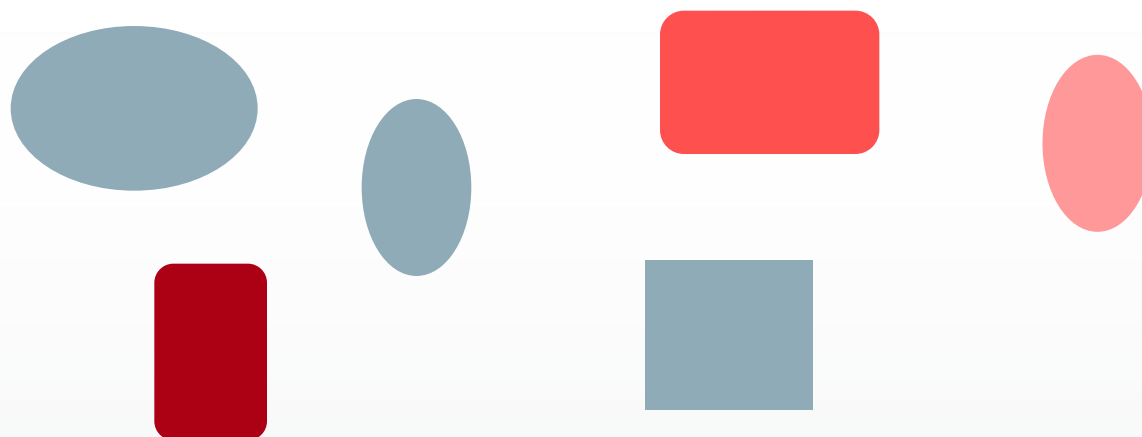


Bottom-Up Approaches:

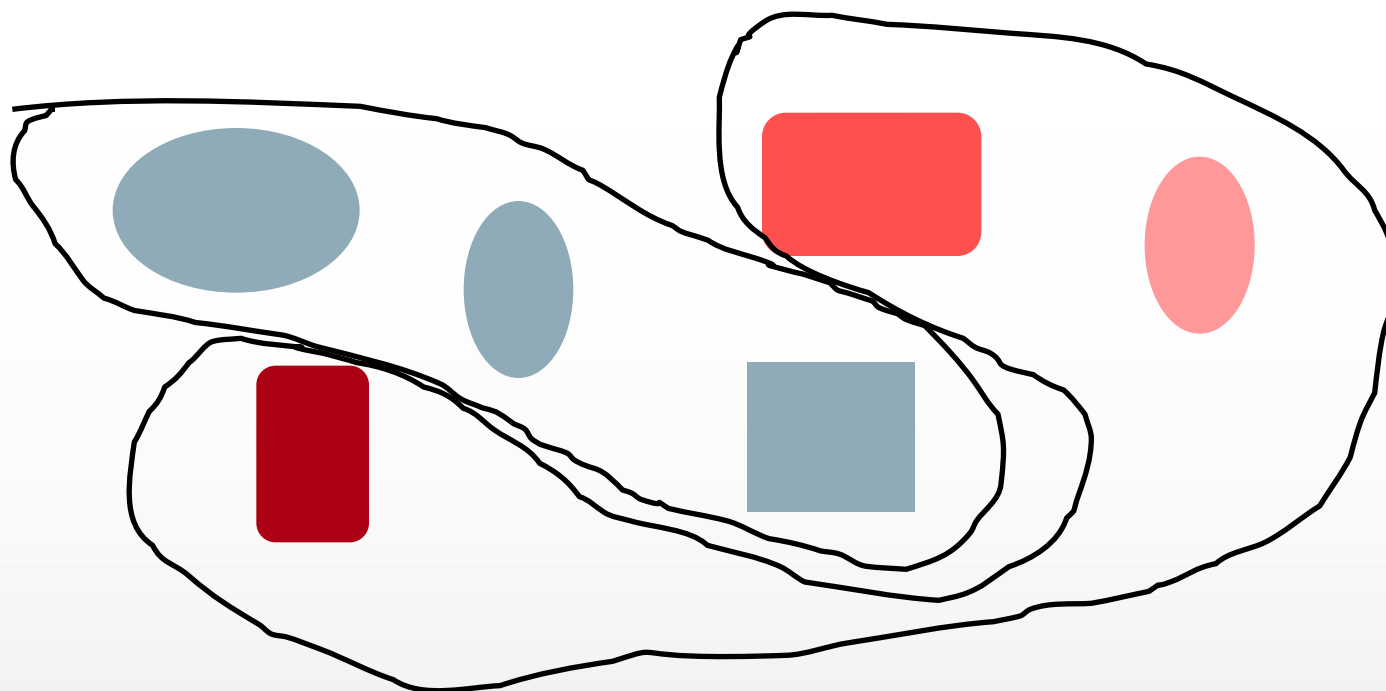
資料探勘,文字探勘



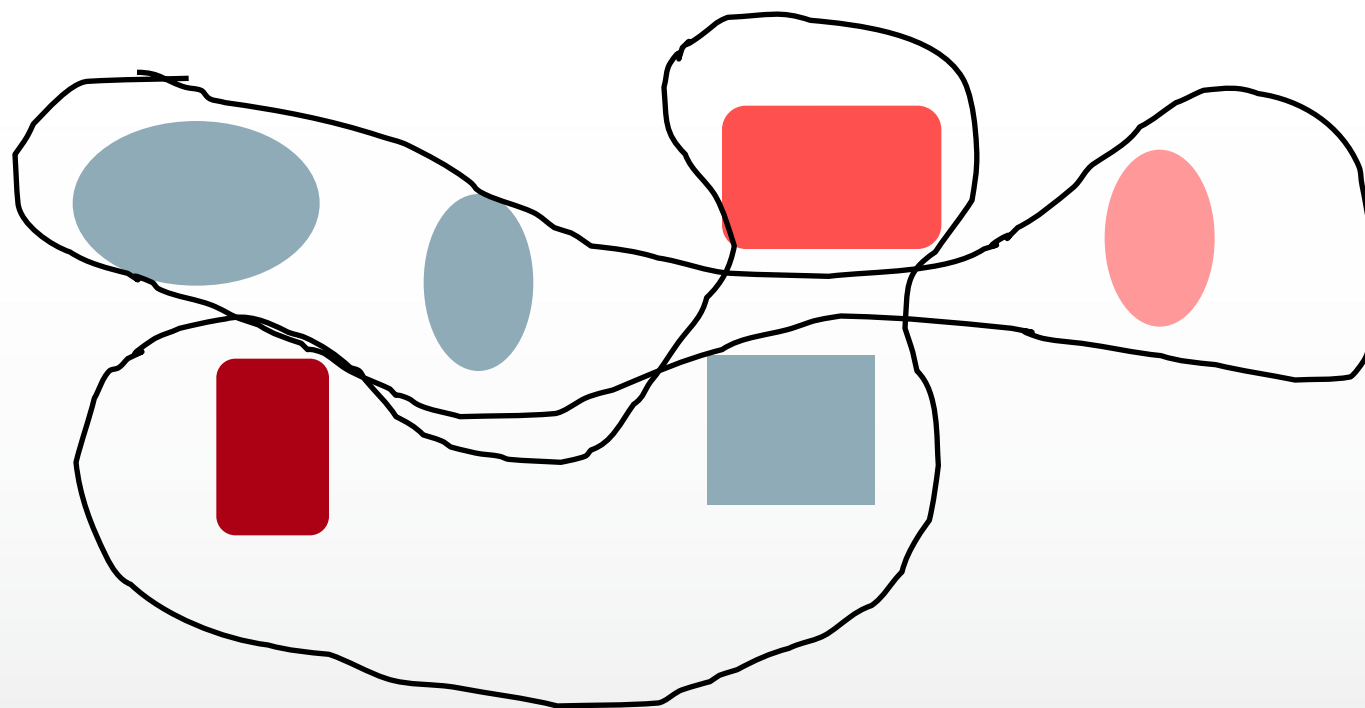
Segmentation



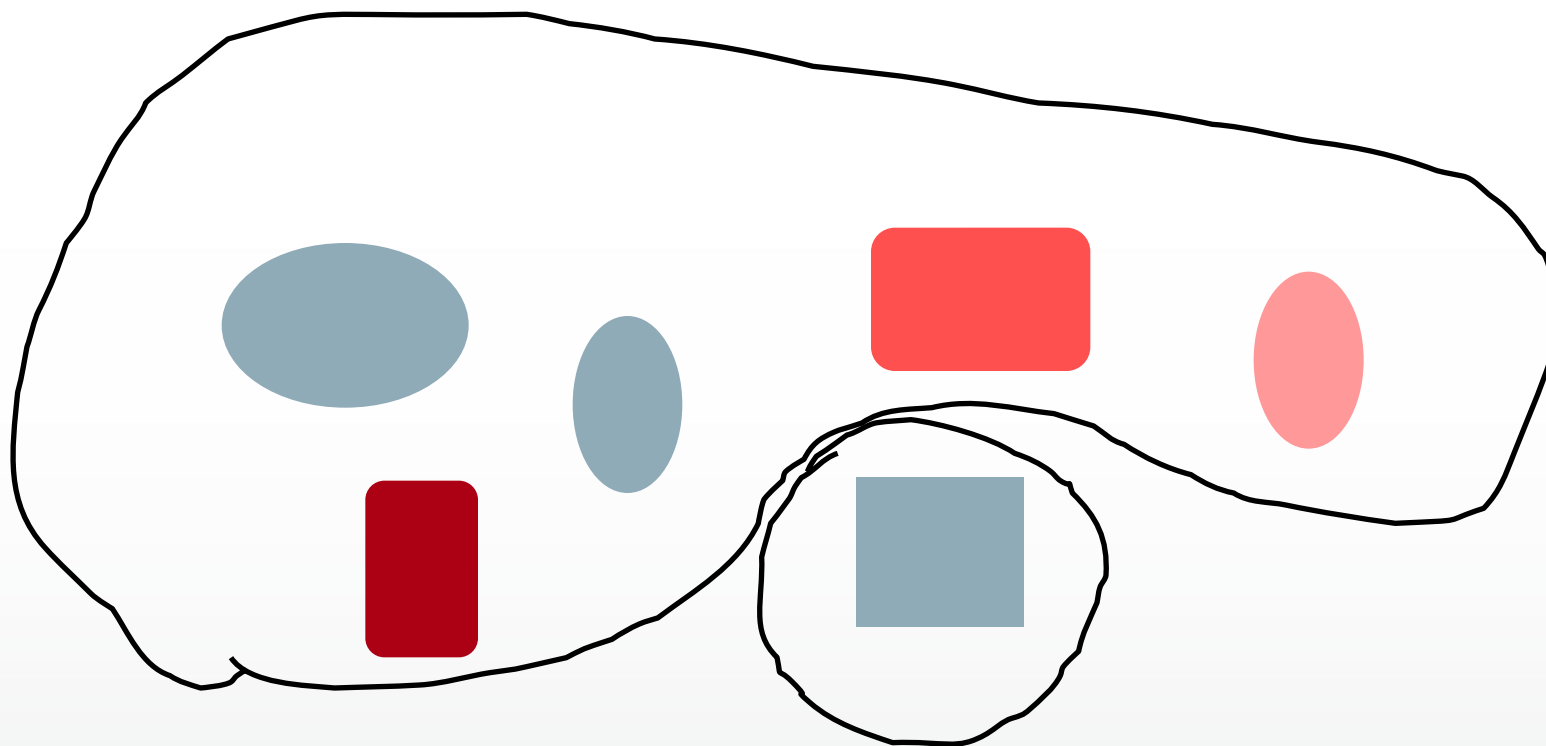
Segmentation



Segmentation



Segmentation



應用範例



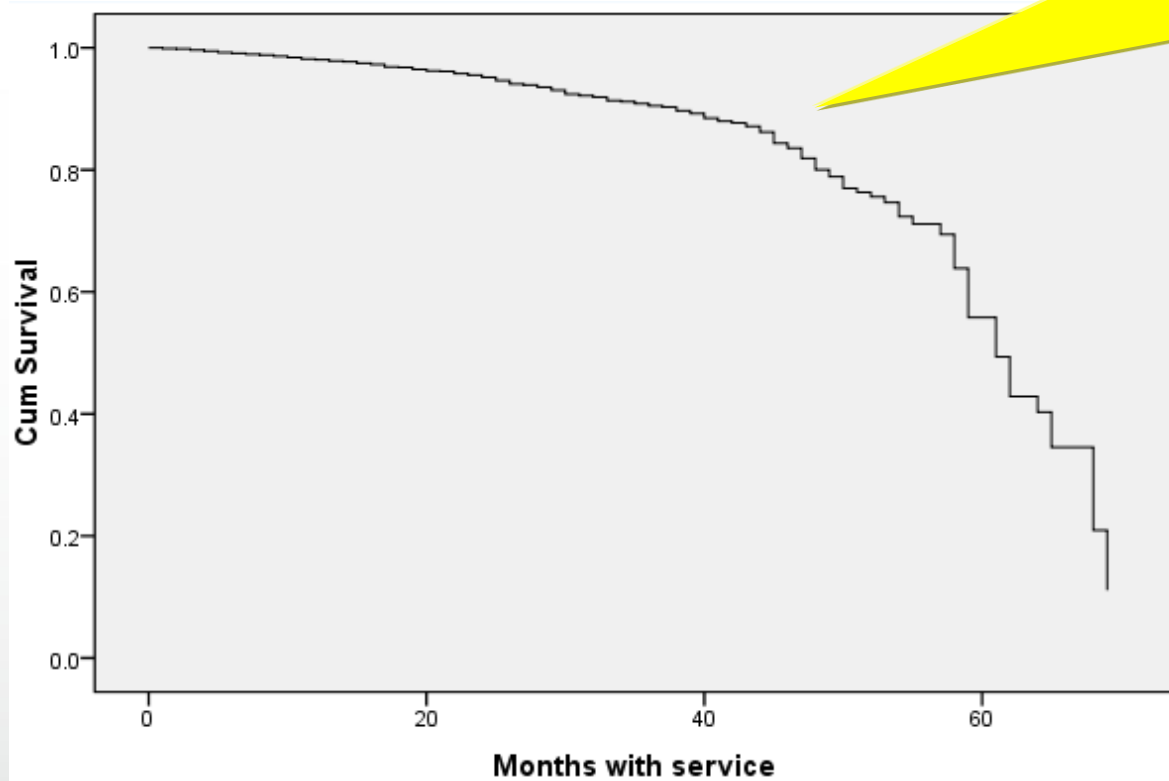
找出行為相似的分行/分點
管理/行銷最佳化

依客戶行為或貢獻度進行分群，
找出相似度高的客群，作為產品
推薦基礎



應用範例

存活分析(Survival Analysis)



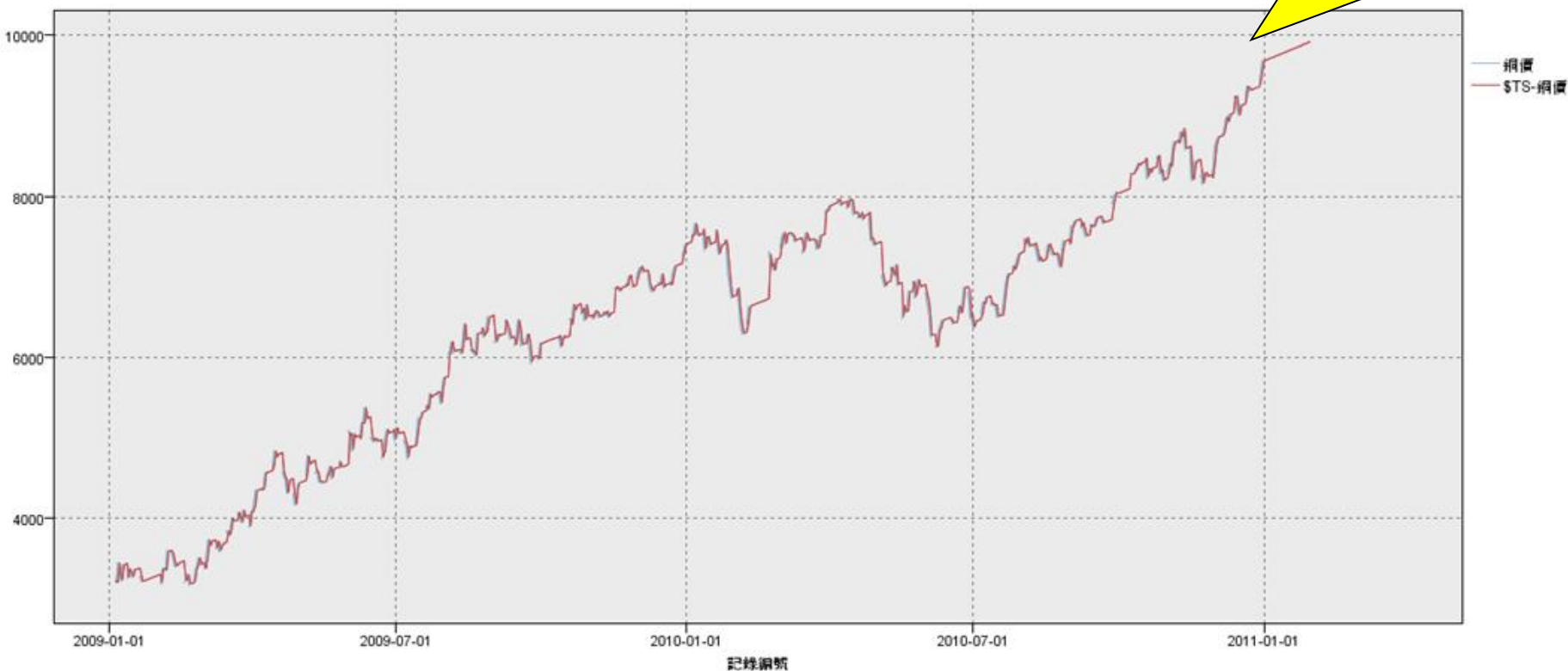
潛在應用：

- 找出客戶流失點，防範於未然

應用範例

時間序列分析(Time Series)

對風險因子進行
壓力測試



SPSS Modeler 視覺化資料採礦流程

The screenshot displays the IBM SPSS Modeler software interface. The main workspace shows a workflow diagram with the following steps:

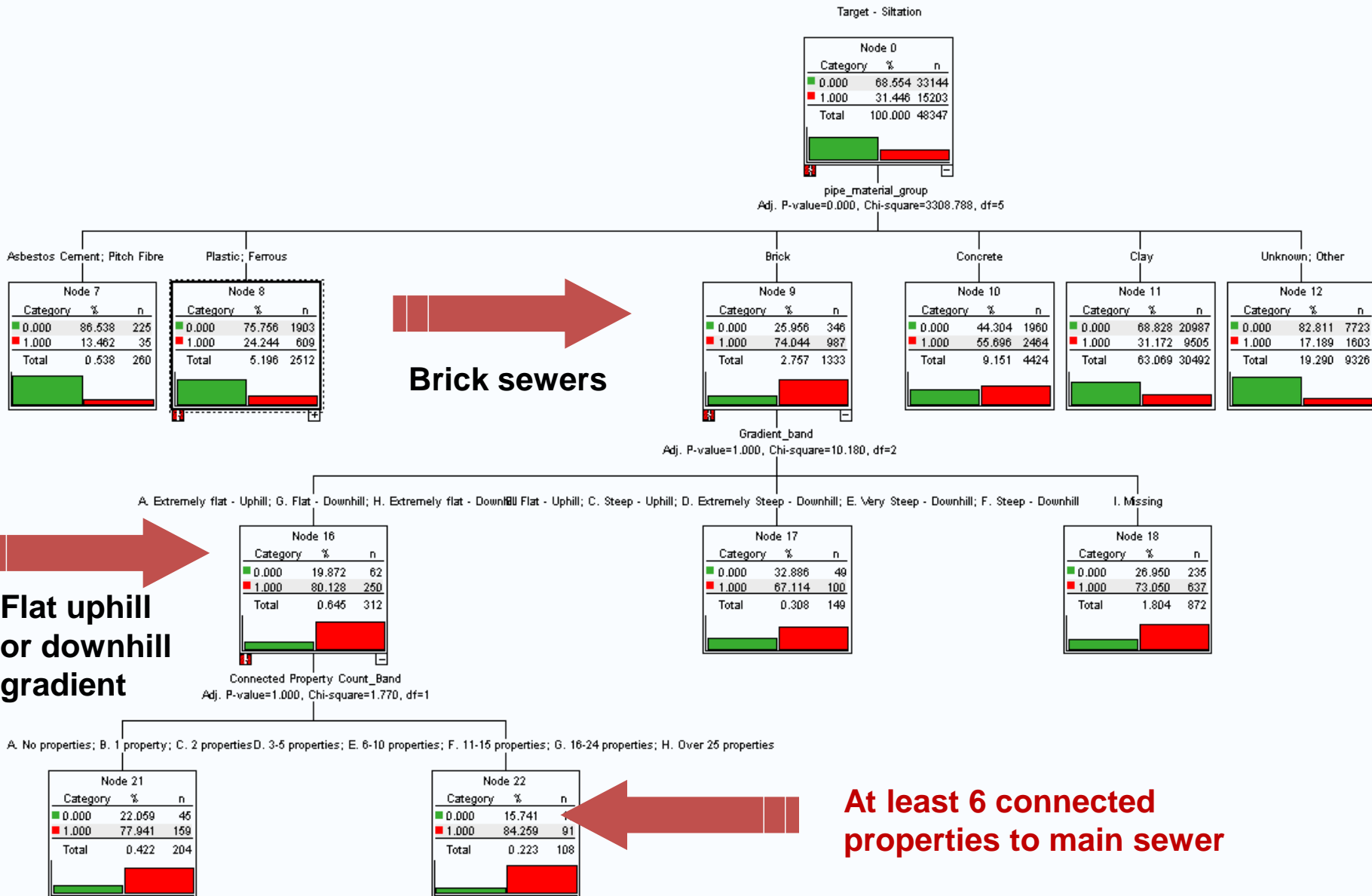
- catalog_seasfac.sav**: The initial data source.
- Time Intervals**: A process node that takes the source data as input.
- men**: A process node that receives input from the **Time Intervals** node.
- men**: A second process node that receives input from the **Time Intervals** node via a dashed arrow.
- [men \$TS-men]**: The final output node, which receives input from the second **men** node.

On the right side, the **CRISP-DM** project browser is visible, showing a hierarchy of folders:

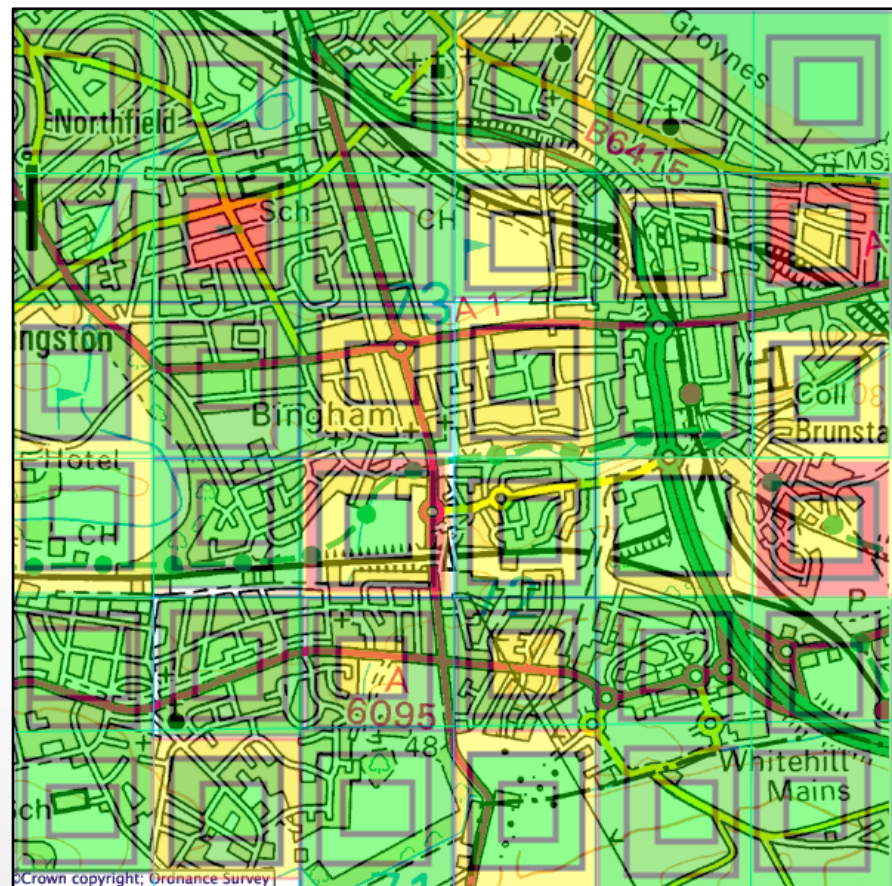
- (未儲存的專案)
- 商業理解
- 資料理解
- 資料預備
- 建模
- 評估
- 佈署

The bottom toolbar contains various icons for data sources, processing, and output, including SQL, 變數檔案, 自動資料準備, 選取, 樣本, 整合, 導出, 類型, 過濾器, 圖版, 自動分類器, 自動數值, 自動集群, 表格, 一般檔案, and 資料庫.

決策樹-預測高風險的”下水道”



透過空間圖標示“高風險”下水道



資料採礦分群 - 找出共同點

為同一客群客戶推薦特定金融商品

K-Means

檔案 (F) 產生 (G) 檢視 (V) 預覽 (V)

模式 摘要 註解

集群分析	集群-2	集群-3	集群-1
標記			
大小	37.4% (8208)	37.1% (8129)	25.5% (5590)
輸入	gender F (100.0%)	gender M (100.0%)	marital S (100.0%)
	marital M (36.4%)	marital U (36.3%)	months_current_account
	months_customer 36 (36.6%)	months_customer 36 (35.8%)	months_customer 24 (57.6%)
	months_current_account	months_current_account	age 34.90
	age 41.15	age 41.01	debt_equity 34.90
	debt_equity 41.15	debt_equity 41.01	age_youngest_child 7.68
	age_youngest_child 12.44	age_youngest_child 12.29	loan_accounts 0.90

集群-1 集群-3 集群-2

gender: F, M

marital: M, S, U

months_current_account

months_customer: 0, 12, 24, 36, 48

age

檢視(V): 集群 重設(D)

檢視(W): 集群比較

確定 取消 套用(A) 重設(R)



非統計人員也能快速、精準建立資料採礦模型

- 傻瓜相機，自動建模

自動建模

檔案 (F) 產生 (G) 檢視 (V) 預覽 (V)

模式 圖表 摘要 設定 註解

排序方式 (S): 使用 遮增 遮減 刪除未使用的模式 檢視: 訓練集

要使用嗎?	圖形	模式	建立時間 (分)	最大值利潤	最大利潤發生於:	提昇 (To...)	整體精確度	欄位數 (已使用)	面積 (曲線下)
<input checked="" type="checkbox"/>		QUEST(Q) 1	< 1	4,644.779	9	3.333	96.935	10	0.986
<input checked="" type="checkbox"/>		C5 1	< 1	7,380	7	3.333	99.53	17	1
<input checked="" type="checkbox"/>		Bayesian 網路 1	< 1	5,905	6	3.333	96.862	27	0.995
<input checked="" type="checkbox"/>		C&RT 樹狀結構(R) 1	< 1	5,602.063	8	3.333	97.852	14	0.993
<input checked="" type="checkbox"/>		CHAID(C) 1	< 1	5,122.276	8	3.333	97.391	5	0.993
<input checked="" type="checkbox"/>		神經網路(N) 1	< 1	7,510	7	3.333	99.608	27	

自動選擇預測力最佳的模型



將資料採礦結果融合至IBM Cognos 商業智慧報表

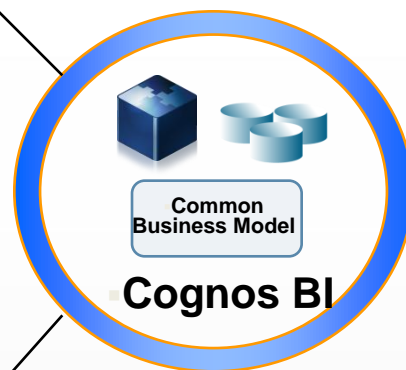
The screenshot shows the IBM Cognos 8 BI Report Studio interface. On the left, the 'Insertable Objects' pane is highlighted with a yellow circle, listing various data sources such as 'predicted_attrition_jmh', 'Employee name (multiscript)', 'Salary', 'Bonus percentage', 'Vacation days taken', 'Sick days taken', 'Termination code', 'Termination reason', 'Employee level', 'Position name', 'Course days', 'Termination_Model', and '\$XS-Termination_Model'. The main report area displays a bar chart titled 'Predicted Employee Status' with a table below it. A callout box on the right states: 'Exported package is immediately available to IBM Cognos 8 Business Intelligence'.

Employee Name	Salary	Bonus value	Course days	Likelihood
<Employee name (multiscript)>	<Salary>	<Bonus value>	<Course days>	<\$XS-Termination_Model>
<Employee name (multiscript)>	<Salary>	<Bonus value>	<Course days>	<\$XS-Termination_Model>
<Employee name (multiscript)>	<Salary>	<Bonus value>	<Course days>	<\$XS-Termination_Model>

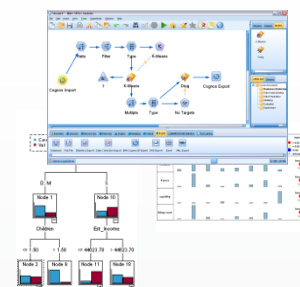
今天 - 預測型企業 – Cognos & SPSS Modeler



1) 借力BI, 由業務儀表版
找出關鍵問題或企業
目標



2) 採用SPSS
進行預測分析
，並把預測結
果回饋到BI 中



3) 透過BI平台, 將
分析結果, 廣泛地
分享、發佈給行銷
、業務人員, 作為
決策參考



IBM Cognos Blueprints – 不同產業特性解決方案範本

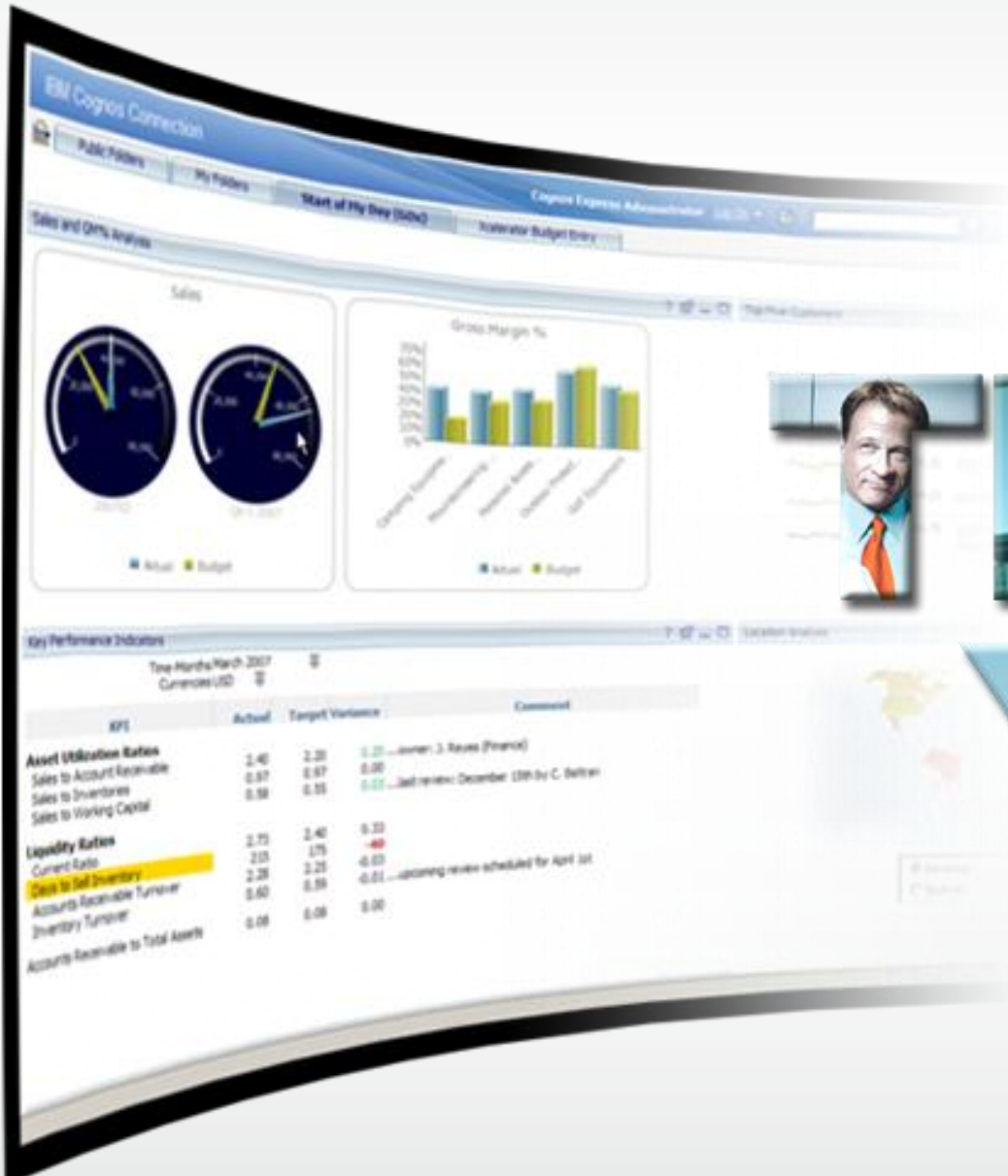
<ul style="list-style-type: none"> 長期策略規劃 財務策略計劃 投資策略管理 整合財報計劃 內部稽控 XBRL (財報共通格式) 計劃分攤 <ul style="list-style-type: none"> 企業集團合併及各公司財報 (IFRS) 財務報表及管理報表 費用計劃及控管 主動性計劃 <ul style="list-style-type: none"> 資本支出計劃 非計劃性資本支出分析 企業員工計劃 風險分析 企業員工資源管理 銷售計劃及分析 業務酬傭計劃分析 			
<p>INSURANCE</p> <ul style="list-style-type: none"> 商品獲利績效 	<p>OIL & GAS</p> <ul style="list-style-type: none"> 上游物料計劃 	<p>GOVERNMENT</p> <ul style="list-style-type: none"> 民意加值管理 方案目標管理 (POM) 市政經營績效 	<p>HIGHER EDUCATION</p> <ul style="list-style-type: none"> 招生及教學內容計劃 薪資計劃及職務管控
<p>BANKING & FINANCIAL MARKETS</p> <ul style="list-style-type: none"> 分行績效管理 客戶獲利分析管理- 企業金融 客戶獲利分析管理- 個人金融 風險調整獲利分析 價格策略 客群分析服務 成本透通分析 	<p>RETAIL</p> <ul style="list-style-type: none"> 財務平台及計分卡 展店計劃 分店營運績效 (P&L) 及計劃 策略性採購計劃 策略性促銷及行銷計劃 	<p>MANUFACTURING</p> <ul style="list-style-type: none"> 基礎型之銷售及營運計劃 通路之銷售及營運計劃 高階主管檢視 交易促銷管理 產品獲利分析 	<p>LIFE SCIENCES</p> <ul style="list-style-type: none"> 臨床資源計劃 臨床實驗分析 臨床實驗參與量預測 品牌整合管理 抽樣最佳化 銷售配額分攤

This represents current product plans and strategy that are subject to change. All release dates and capabilities are subject to the Disclaimer



IBM Cognos BI recognized by more than 1000 customers





Thank
YOU

