



Tamkang  
University

商業智慧實務

# Practices of Business Intelligence

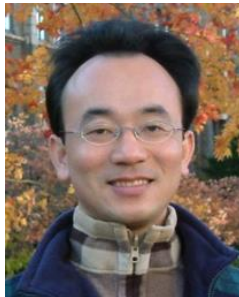
商業智慧導論

## (Introduction to Business Intelligence)

1032BI01

MI4

Wed, 9,10 (16:10-18:00) (B130)



Min-Yuh Day

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淡江大學 資訊管理學系

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2015-02-25



# 淡江大學103學年度第2學期 課程教學計畫表

Spring 2015 (2015.02 - 2015.06)

- 課程名稱：商業智慧實務  
(Practices of Business Intelligence)
- 授課教師：戴敏育 (Min-Yuh Day)
- 開課系級：資管四P (TLMXB4P)
- 開課資料：選修 單學期 2 學分 (2 Credits, Elective)
- 上課時間：週三 9,10 (Wed 16:10-18:00)
- 上課教室：B130

# 課程簡介

- 本課程介紹商業智慧 (Business Intelligence) 的基礎概念及技術實務。
- 課程內容包括
  - 商業智慧導論、
  - 管理決策支援系統與商業智慧、
  - 企業績效管理、
  - 資料倉儲、
  - 商業智慧的資料探勘、
  - 資料科學與巨量資料分析、
  - 文字探勘與網路探勘、
  - 意見探勘與情感分析、
  - 社會網路分析。

# Course Introduction

- This course introduces the **fundamental concepts** and **technology practices** of **business intelligence**.
- Topics include
  - Introduction to Business Intelligence,
  - Management Decision Support System and Business Intelligence,
  - Business Performance Management,
  - Data Warehousing,
  - Data Mining for Business Intelligence,
  - Data Science and Big Data Analytics,
  - Text and Web Mining,
  - Opinion Mining and Sentiment Analysis,
  - Social Network Analysis.

課程目標

瞭解及應用

商業智慧

基本概念

與

技術實務

# Objective

Understand and apply  
the fundamental concepts  
and  
technology practices  
of  
business intelligence.

# 課程大綱 (Syllabus)

週次 (Week)	日期 (Date)	內容 (Subject/Topics)
1	2015/02/25	商業智慧導論 (Introduction to Business Intelligence)
2	2015/03/04	管理決策支援系統與商業智慧 (Management Decision Support System and Business Intelligence)
3	2015/03/11	企業績效管理 (Business Performance Management)
4	2015/03/18	資料倉儲 (Data Warehousing)
5	2015/03/25	商業智慧的資料探勘 (Data Mining for Business Intelligence)
6	2015/04/01	教學行政觀摩日 (Off-campus study)
7	2015/04/08	商業智慧的資料探勘 (Data Mining for Business Intelligence)
8	2015/04/15	資料科學與巨量資料分析 (Data Science and Big Data Analytics)

# 課程大綱 (Syllabus)

週次	日期	內容 (Subject/Topics)
9	2015/04/22	期中報告 (Midterm Project Presentation)
10	2015/04/29	期中考試週 (Midterm Exam)
11	2015/05/06	文字探勘與網路探勘 (Text and Web Mining)
12	2015/05/13	意見探勘與情感分析 (Opinion Mining and Sentiment Analysis)
13	2015/05/20	社會網路分析 (Social Network Analysis)
14	2015/05/27	期末報告 (Final Project Presentation)
15	2015/06/03	畢業考試週 (Final Exam)



# 教材課本與參考書籍

- 教材課本 (Textbook)：講義 (Slides)
- 參考書籍 (References)：
  - Decision Support and Business Intelligence Systems, Ninth Edition, Efraim Turban, Ramesh Sharda, Dursun Delen, 2011, Pearson
  - 決策支援與企業智慧系統，九版，Efraim Turban 等著，李昇暉審定，2011，華泰

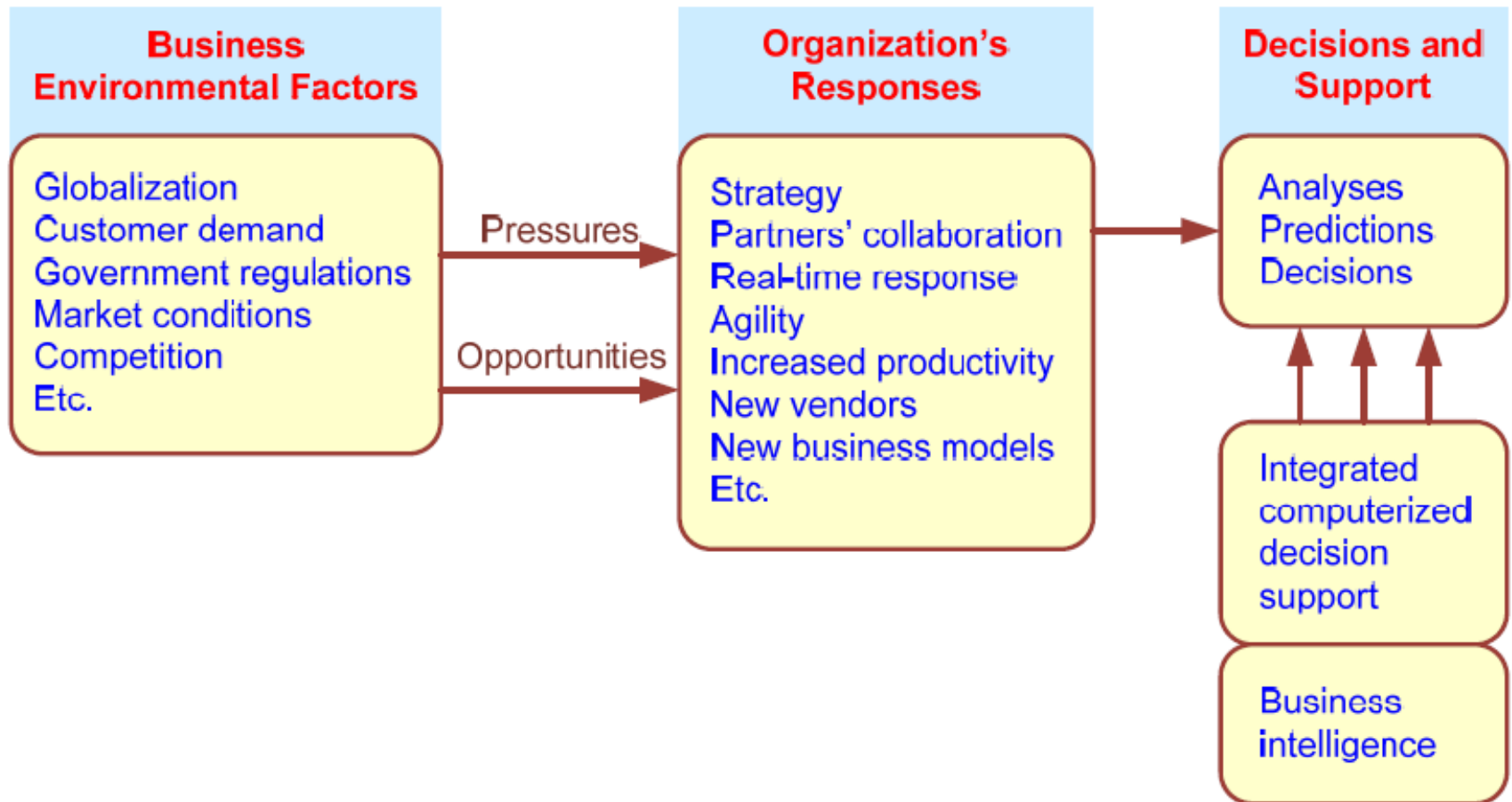
# 作業與學期成績計算方式

- 作業篇數
  - 3篇
- 學期成績計算方式
  - 期中評量：30 %
  - 期末評量：30 %
  - 其他（課堂參與及報告討論表現）：40 %

# Team Term Project

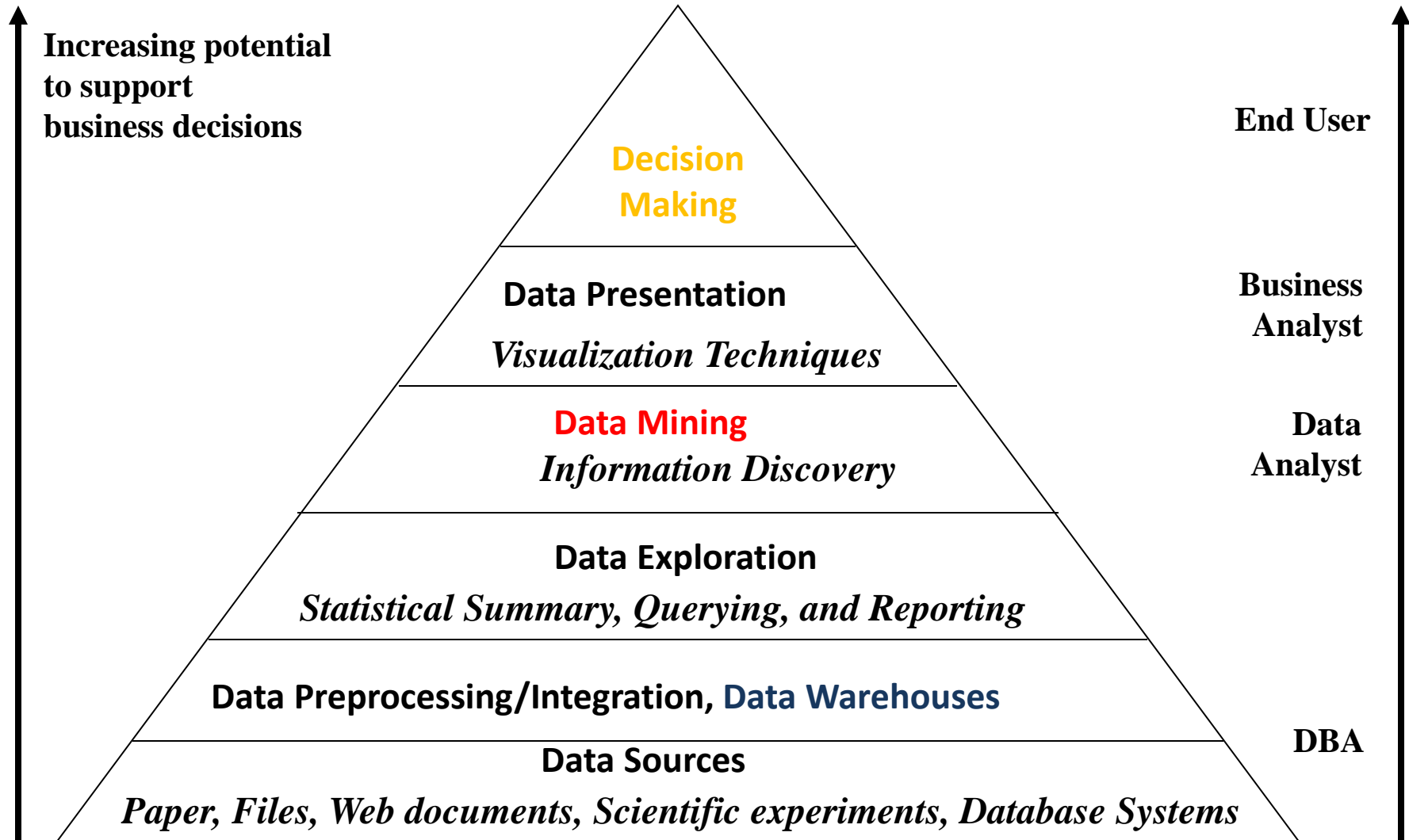
- Term Project Topics
  - Data mining
  - Web mining
  - Business Intelligence
  - Big Data Analytics
- 3-4 人為一組
  - 分組名單於 2015/03/04 (三) 課程下課時繳交
  - 由班代統一收集協調分組名單

# Business Pressures–Responses– Support Model



# Data Warehouse

## Data Mining and Business Intelligence



# Business Intelligence (BI)

- BI is an umbrella term that combines architectures, tools, databases, analytical tools, applications, and methodologies
- Like DSS, BI a content-free expression, so it means different things to different people
- BI's major objective is to enable easy access to data (and models) to provide business managers with the ability to conduct analysis
- BI helps *transform* data, to information (and knowledge), to decisions and finally to action

# A Brief History of BI

- The term BI was coined by the Gartner Group in the mid-1990s
- However, the concept is much older
  - 1970s - MIS reporting - static/periodic reports
  - 1980s - Executive Information Systems (EIS)
  - 1990s - OLAP, dynamic, multidimensional, ad-hoc reporting -  
> coining of the term “BI”
  - 2005+ Inclusion of AI and Data/Text Mining capabilities;  
Web-based Portals/Dashboards
  - 2010s - yet to be seen

# The Evolution of BI Capabilities

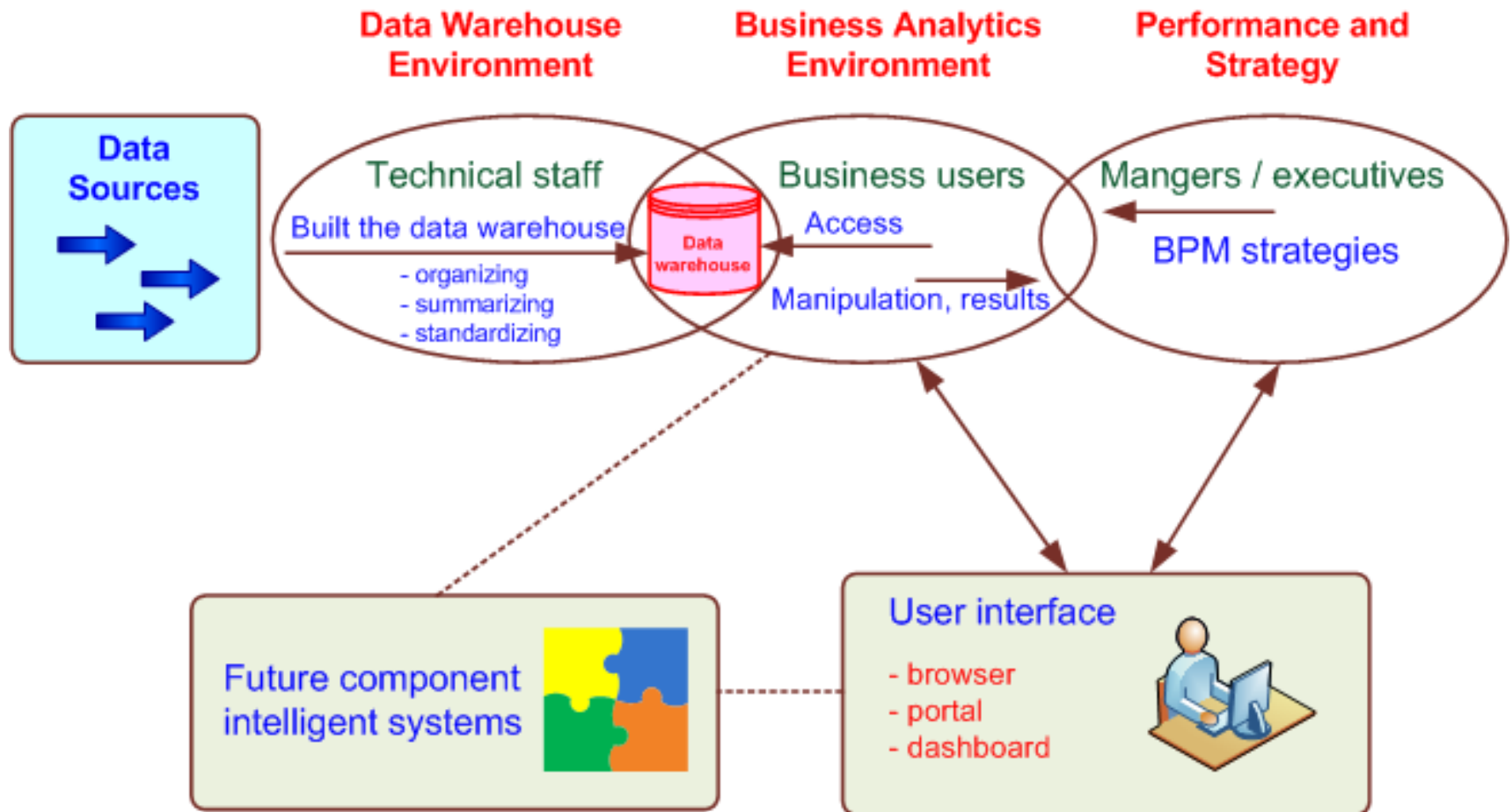




# The Architecture of BI

- A BI system has four major components
  - a **data warehouse**, with its source data
  - **business analytics**, a collection of tools for manipulating, mining, and analyzing the data in the data warehouse;
  - **business performance management** (BPM) for monitoring and analyzing performance
  - a **user interface** (e.g., dashboard)

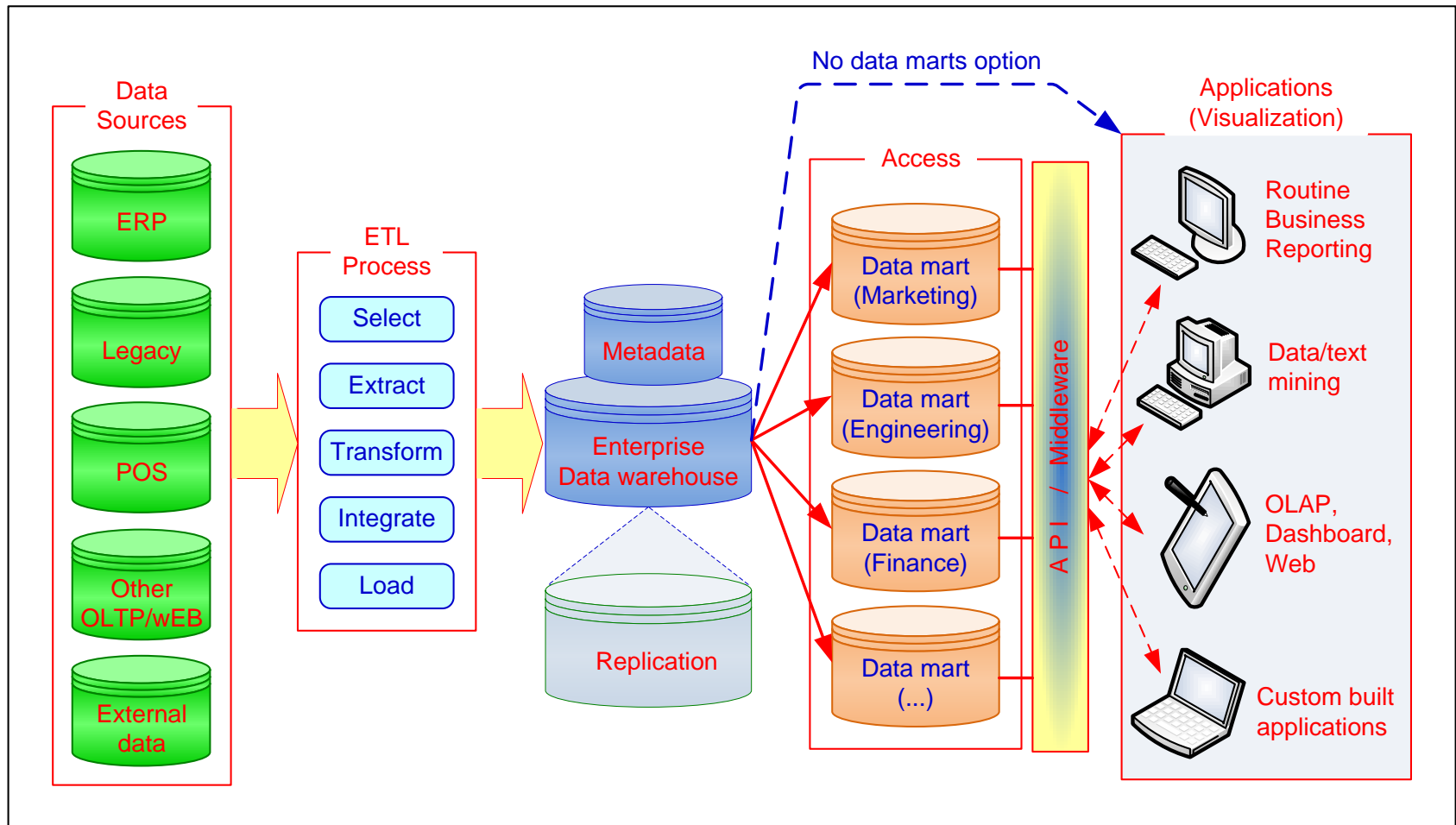
# A High-Level Architecture of BI



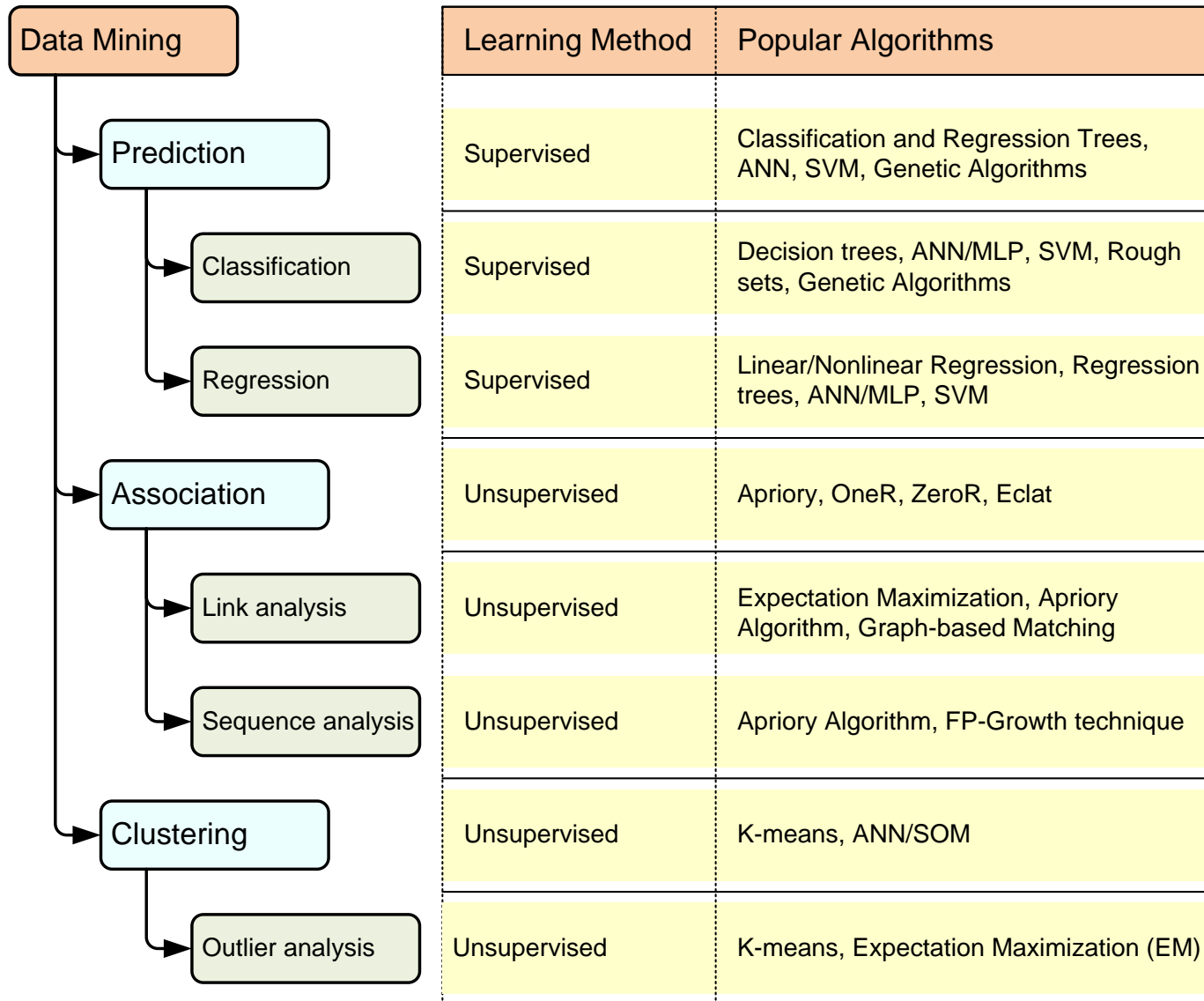
# Components in a BI Architecture

- The **data warehouse** is a large repository of well-organized historical data
- **Business analytics** are the tools that allow transformation of data into information and knowledge
- **Business performance management (BPM)** allows monitoring, measuring, and comparing key performance indicators
- **User interface** (e.g., dashboards) allows access and easy manipulation of other BI components

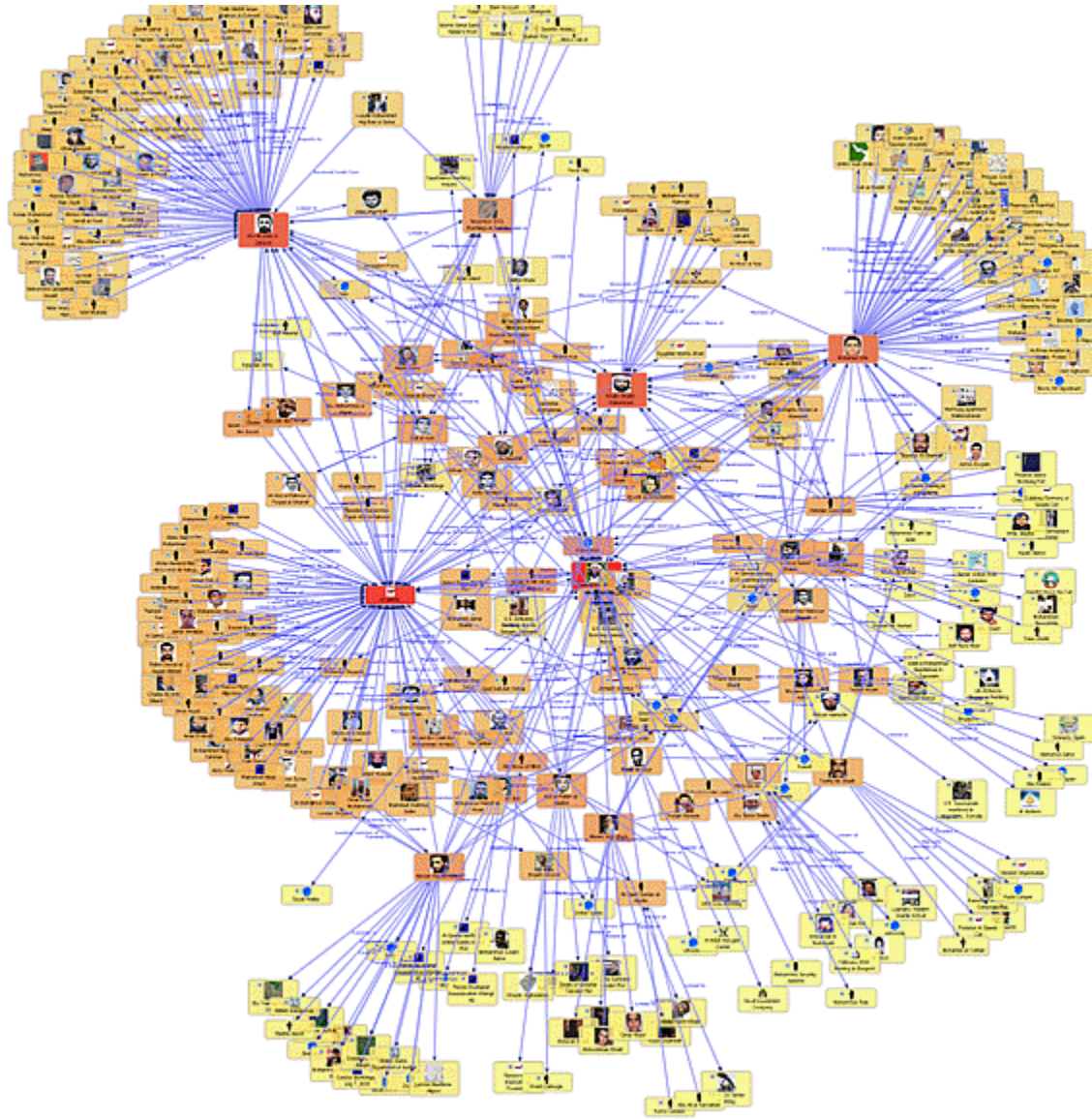
# A Conceptual Framework for DW



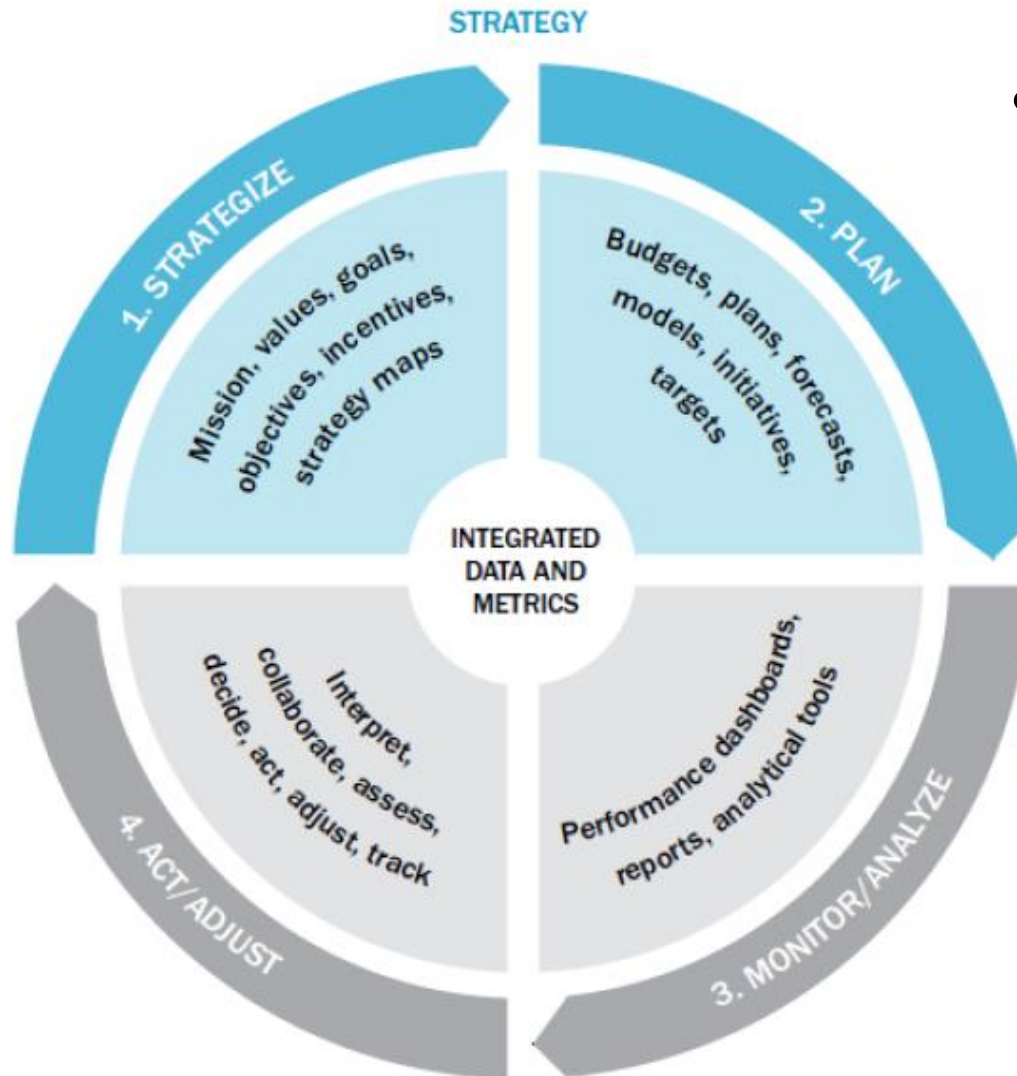
# A Taxonomy for Data Mining Tasks



# Social Network Analysis



# A Closed-Loop Process to Optimize Business Performance

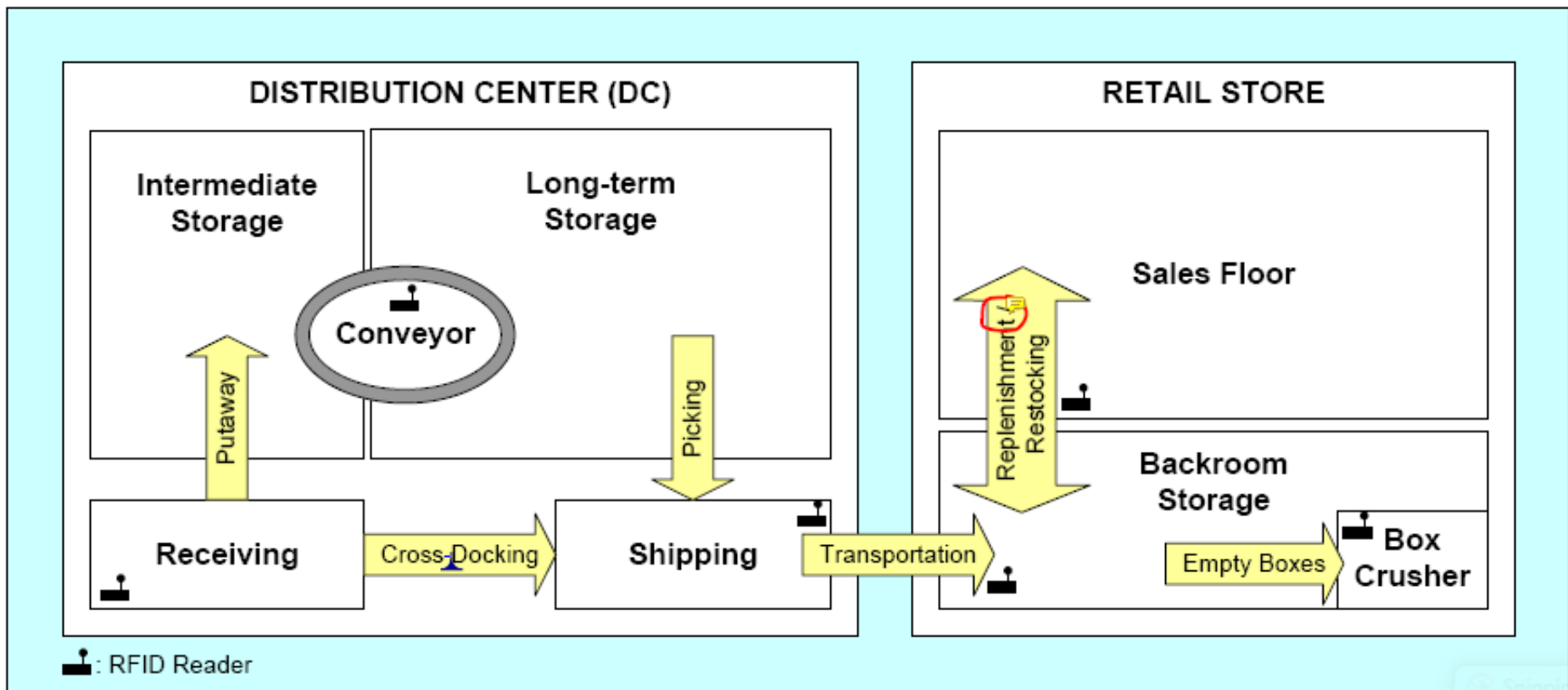


- Process Steps
  1. Strategize
  2. Plan
  3. Monitor/analyze
  4. Act/adjust

Each with its own  
process steps...

# RFID for Supply Chain BI

- RFID in Retail Systems





# Implications of Business and Enterprise Social Networks

- Business oriented social networks can go beyond “advertising and sales”
- Emerging enterprise social networking apps:
  - Finding and Recruiting Workers
  - Management Activities and Support
  - Training
  - Knowledge Management and Expert Location
    - e.g., [innocentive.com](http://innocentive.com); [awareness.com](http://awareness.com); Caterpillar
  - Enhancing Collaboration
  - Using Blogs and Wikis Within the Enterprise

# Implications of Business and Enterprise Social Networks

- Survey shows that best-in-class companies use blogs and wikis for the following applications:
  - Project collaboration and communication (63%)
  - Process and procedure document (63%)
  - FAQs (61%)
  - E-learning and training (46%)
  - Forums for new ideas (41%)
  - Corporate-specific dynamic glossary and terminology (38%)
  - Collaboration with customers (24%)

# The Benefits of BI

- The ability to provide **accurate information** when needed, including a real-time view of the corporate performance and its parts
- A survey by Thompson (2004)
  - Faster, more accurate reporting (81%)
  - Improved decision making (78%)
  - Improved customer service (56%)
  - Increased revenue (49%)

Wiley CIO Series

Copyrighted Material

Foreword by  
**JIM STOGDILL**  
General Manager  
Radar,  
O'Reilly Media

# BIG DATA BIG ANALYTICS

EMERGING BUSINESS INTELLIGENCE AND  
ANALYTIC TRENDS FOR TODAY'S  
BUSINESSES

Michael Minelli • Michele Chambers • Ambiga Dhiraj

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# Business Intelligence Trends

1. **Agile** Information Management (IM)
2. **Cloud** Business Intelligence (BI)
3. **Mobile** Business Intelligence (BI)
4. **Analytics**
5. **Big Data**

# **Business Intelligence Trends: Computing and Service**

- Cloud Computing and Service
- Mobile Computing and Service
- Social Computing and Service

# Business Intelligence and Analytics

- Business Intelligence 2.0 (BI 2.0)
  - Web Intelligence
  - Web Analytics
  - Web 2.0
  - Social Networking and Microblogging sites
- Data Trends
  - Big Data
- Platform Technology Trends
  - Cloud computing platform

# Business Intelligence and Analytics: Research Directions

## 1. Big Data Analytics

- Data analytics using Hadoop / MapReduce framework

## 2. Text Analytics

- From Information Extraction to Question Answering
- From Sentiment Analysis to Opinion Mining

## 3. Network Analysis

- Link mining
- Community Detection
- Social Recommendation



# Data Scientist:

## *The Sexiest Job of the 21st Century*

**Meet the people who  
can coax treasure out of  
messy, unstructured data.**

*by Thomas H. Davenport  
and D.J. Patil*

**W**hen Jonathan Goldman arrived for work in June 2006 at LinkedIn, the business networking site, the place still felt like a start-up. The company had just under 8 million accounts, and the number was growing quickly as existing members invited their friends and colleagues to join. But users weren't seeking out connections with the people who were already on the site at the rate executives had expected. Something was apparently missing in the social experience. As one LinkedIn manager put it, "It was like arriving at a conference reception and realizing you don't know anyone. So you just stand in the corner sipping your drink—and you probably leave early."

# Top 10 CIO Technology Priorities in 2015

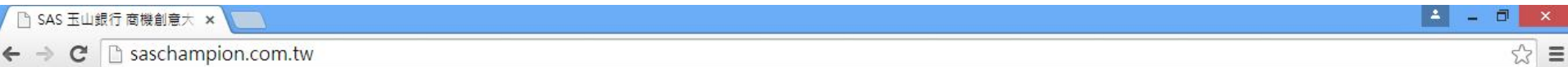
1. Business Intelligence/Analytics
2. Infrastructure and Data Center
3. Cloud
4. ERP
5. Mobile
6. Digitalization/Digital Marketing
7. Security
8. Networking, Voice & Data
9. CRM
10. Industry-Specific Applications

Source: Gartner, January 2015

<http://www.gartner.com/newsroom/id/2981317>

# SAS與玉山銀行

## 【大數據數位行銷應用大賽】



最新消息

大賽起源

活動辦法

我要報名

常見問題



第四屆資料科學家系列

# 大數據 數位行銷 應用大賽



贏在求職起跑點 提升職場競爭力  
想要躋身進入資料科學家的行列  
想要證明自己是資料分析的高手

挑戰  
\$300,000  
高額總獎金

SAS與  
玉山銀行優先  
招募與面試

我要報名

資料科學家系列

大數據數位行銷應用大賽

在這個巨量資料的時代，懂得巨量分析的專業人才「資料科學家」(Data Scientist)將成為未來炙手可熱的明日之星。

<http://saschampion.com.tw/>

top

# SAS與玉山銀行

## 【大數據數位行銷應用大賽】



第四屆資料科學家系列大

www.accupass.com/go/saschampion

ACCUPASS 找活動 辦活動 申請贊助 登入 註冊

活動介紹 報名表下載 票券資訊 討論區

討論 分享 6

### 活動時間與地點報名辦法

- (一) 報名日期：2015年2月24日(二)至3月18日(三)，報名限量150組，額滿為止！
- (二) 起跑說明會：2015年3月26日(四) - 玉山銀行人力發展中心 1樓登峰廳 (參賽團隊每組皆須指派2名隊員出席)
- (三) 初賽訓練課程：2015年3月28日(六)至4月1日(三) - 臺北大學資訊中心及逢甲大學電腦教室，每梯次為期一天。
- (四) EG個人能力檢測：2015年5月3日(日) - 臺北大學資訊中心、淡江大學電腦教室、逢甲大學電腦教室，共9場次，考試時間為14:00-16:00。
- (五) 複賽訓練課程：2015年5月8日(五)至5月9日(六) - 臺北大學資訊中心，共2梯次，每梯次為期一天。\*備註\*複賽入圍之隊伍方可參加
- (六) 複賽繳件日期：2015年5月29日(五)
- (七) 決賽簡報日期：2015年6月12日(五)
- (八) 頒獎典禮日期：2015年6月30日(二)

報名即將在**2015年2月24日**正式開跑！  
早鳥報名優惠每組只要**\$600元**！  
(含每人初賽SAS教育訓練課程與教材、EG能力檢測)

挑戰巨量分析、迎接數位行銷新浪潮，  
快召集身邊分析好手，一同組隊來踢館！

<http://www.accupass.com/go/saschampion>

客服小幫手

# Summary

- This course introduces the **fundamental concepts** and **technology practices** of **business intelligence**.
- Topics include
  - Introduction to Business Intelligence,
  - Management Decision Support System and Business Intelligence,
  - Business Performance Management,
  - Data Warehousing,
  - Data Mining for Business Intelligence,
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# Contact Information

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