

Data Mining

資料探勘

Introduction to Data Mining

資料探勘導論

1012DM01

MI4

Thu 9, 10 (16:10-18:00) B216

Min-Yuh Day

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2013-02-21

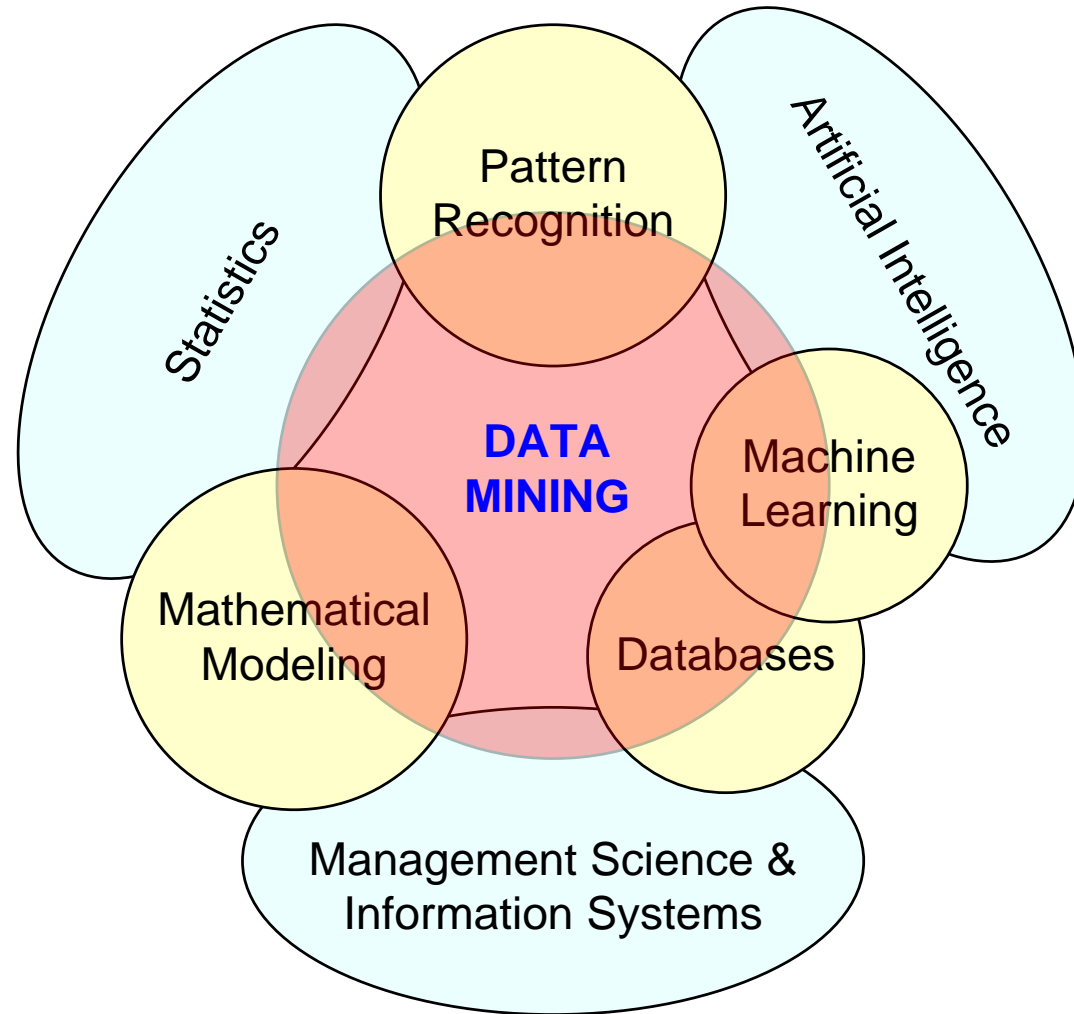
淡江大學101學年度第2學期

課程教學計畫表

(2013.02 - 2013.06)

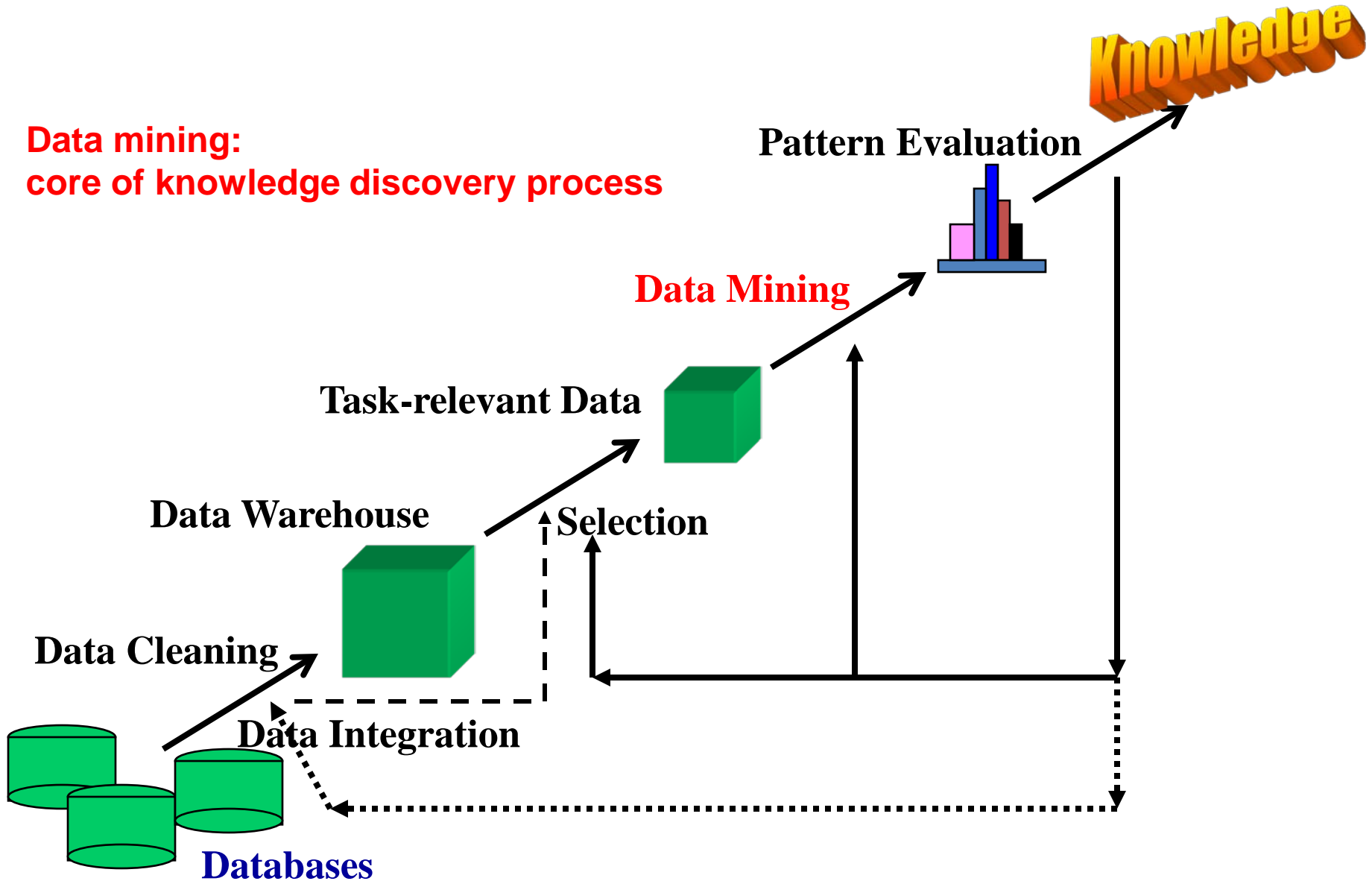
- 課程名稱：資料探勘 (Data Mining)
- 授課教師：戴敏育 (Min-Yuh Day)
- 開課系級：資管四P (TLMXB4P)
- 開課資料：選修 單學期 2 學分 (2 Credits, Elective)
- 上課時間：週四 9,10 (Thu 16:10-18:00)
- 上課教室：B216

Data Mining at the Intersection of Many Disciplines



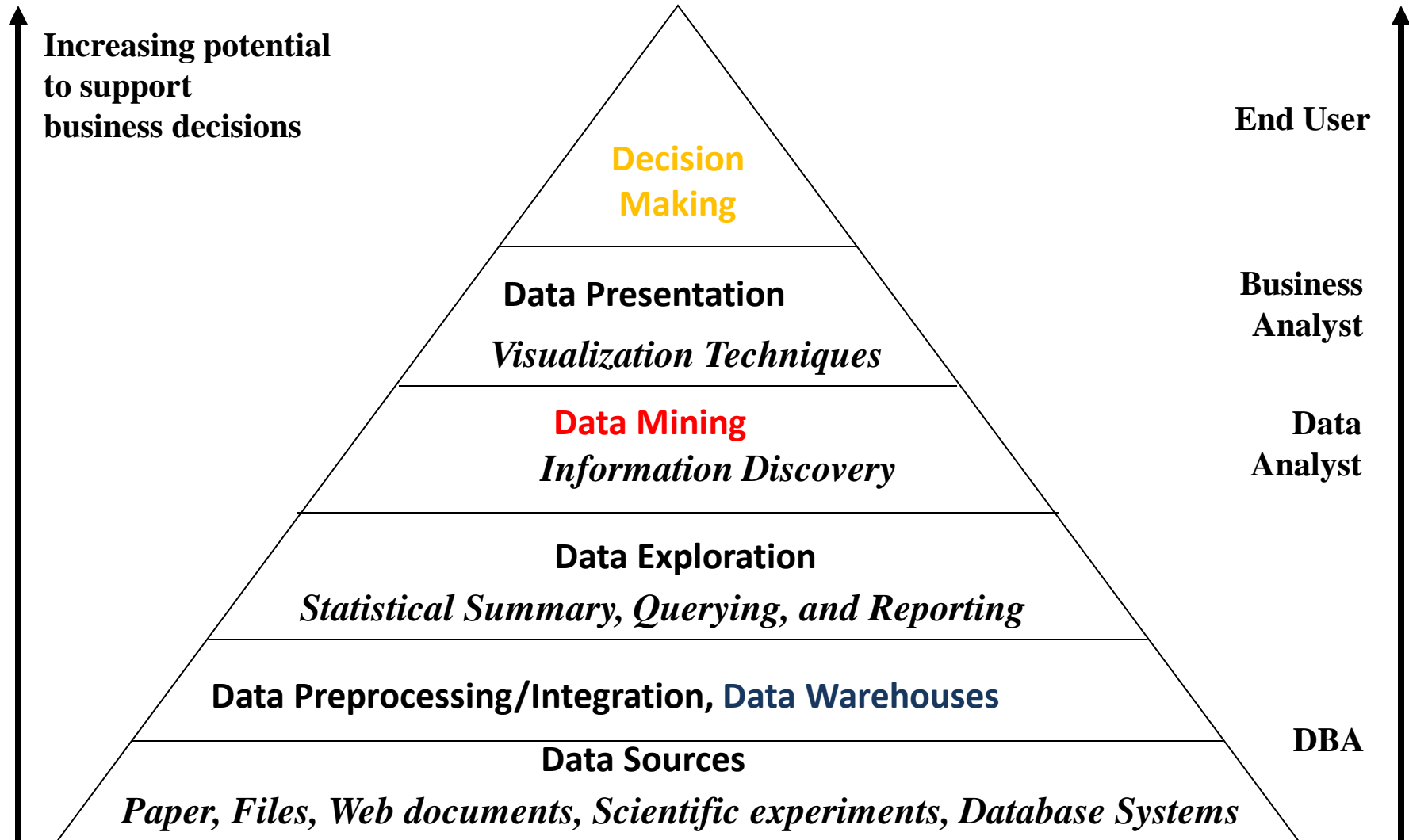
Knowledge Discovery (KDD) Process

Data mining:
core of knowledge discovery process

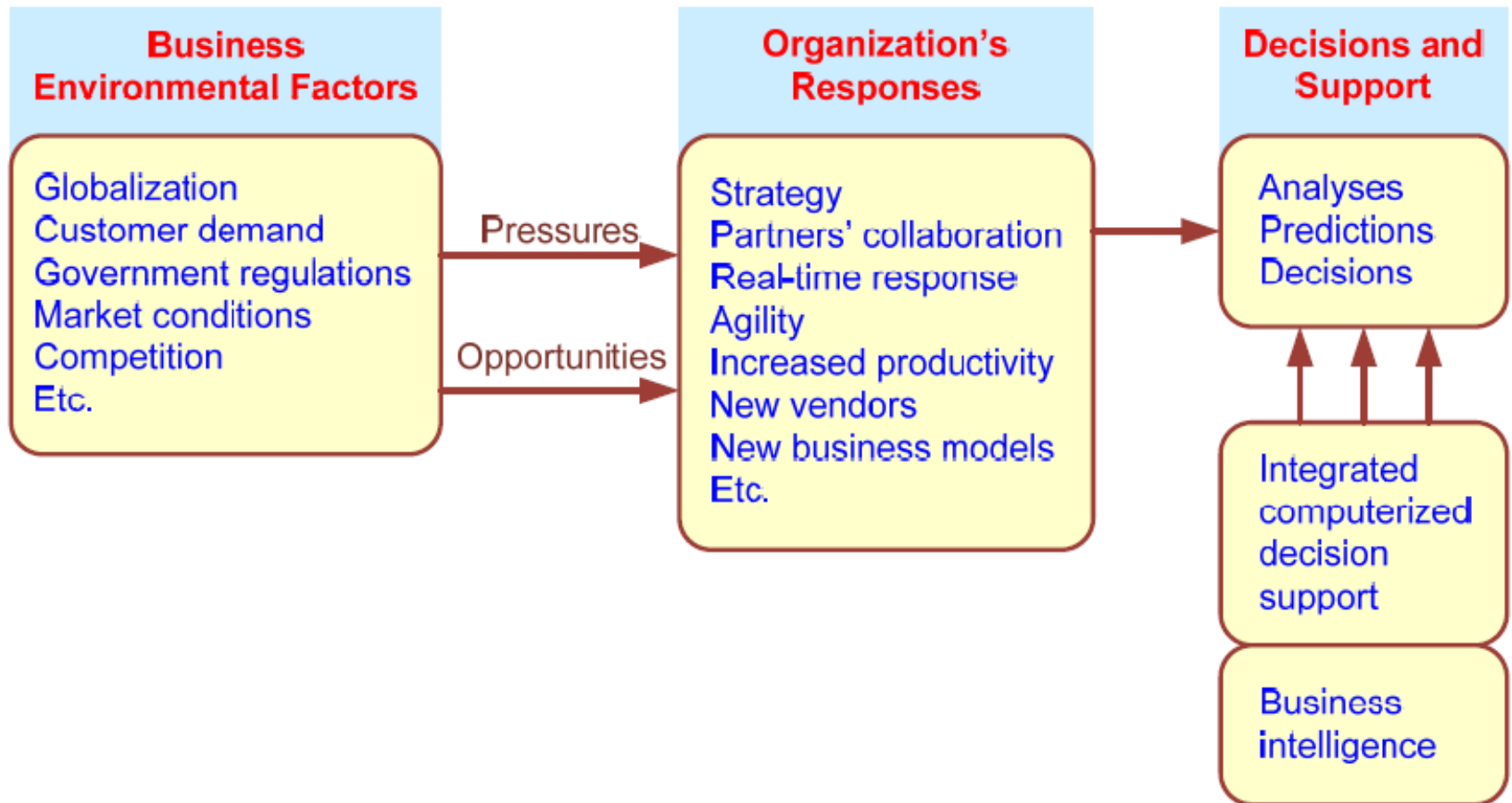


Data Warehouse

Data Mining and Business Intelligence



Business Pressures–Responses– Support Model



課程簡介

- 本課程介紹資料探勘 (Data Mining) 的基礎概念及應用技術。
- 課程內容包括
 - 資料探勘導論
 - 關連分析
 - 分類與預測
 - 分群分析
 - SAS企業資料採礦實務與認證
 - 資料探勘個案分析與實作

Course Introduction

- This course introduces the **fundamental concepts** and **applications technology** of data mining.
- Topics include
 - Introduction to Data Mining
 - Association Analysis
 - Classification and Prediction
 - Cluster Analysis
 - **Data Mining Using SAS Enterprise Miner**
 - **Case Study and Implementation of Data Mining**

課程目標 (Objective)

- 瞭解及應用 資料探勘基本概念與技術。
- Understand and apply the fundamental concepts and technology of data mining

課程大綱 (Syllabus)

週次	日期	內容 (Subject/Topics)
1	102/02/21	資料探勘導論 (Introduction to Data Mining)
2	102/02/28	和平紀念日 (放假一天) (Peace Memorial Day) (No Classes)
3	102/03/07	關連分析 (Association Analysis)
4	102/03/14	分類與預測 (Classification and Prediction)
5	102/03/21	分群分析 (Cluster Analysis)
6	102/03/28	SAS企業資料採礦實務 (Data Mining Using SAS Enterprise Miner)
7	102/04/04	清明節、兒童節(放假一天) (Children's Day, Tomb Sweeping Day)(No Classes)
8	102/04/11	個案分析與實作一 (SAS EM 分群分析)： Banking Segmentation (Cluster Analysis – K-Means using SAS EM)

課程大綱 (Syllabus)

週次	日期	內容 (Subject/Topics)
9	102/04/18	期中報告 (Midterm Presentation)
10	102/04/25	期中考試週
11	102/05/02	個案分析與實作二 (SAS EM 關連分析) : Web Site Usage Associations (Association Analysis using SAS EM)
12	102/05/09	個案分析與實作三 (SAS EM 決策樹、模型評估) : Enrollment Management Case Study (Decision Tree, Model Evaluation using SAS EM)
13	102/05/16	個案分析與實作四 (SAS EM 迴歸分析、類神經網路) : Credit Risk Case Study (Regression Analysis, Artificial Neural Network using SAS EM)
14	102/05/23	期末專題報告 (Term Project Presentation)
15	102/05/30	畢業考試週

教學方法與評量方法

- 教學方法
 - － 講述、討論、實作
- 評量方法
 - － 實作、報告、上課表現

教材課本

- 講義 (Slides)
- 參考書籍
 - Applied Analytics Using SAS Enterprise Mining, Jim Georges, Jeff Thompson and Chip Wells, 2010, SAS
 - 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

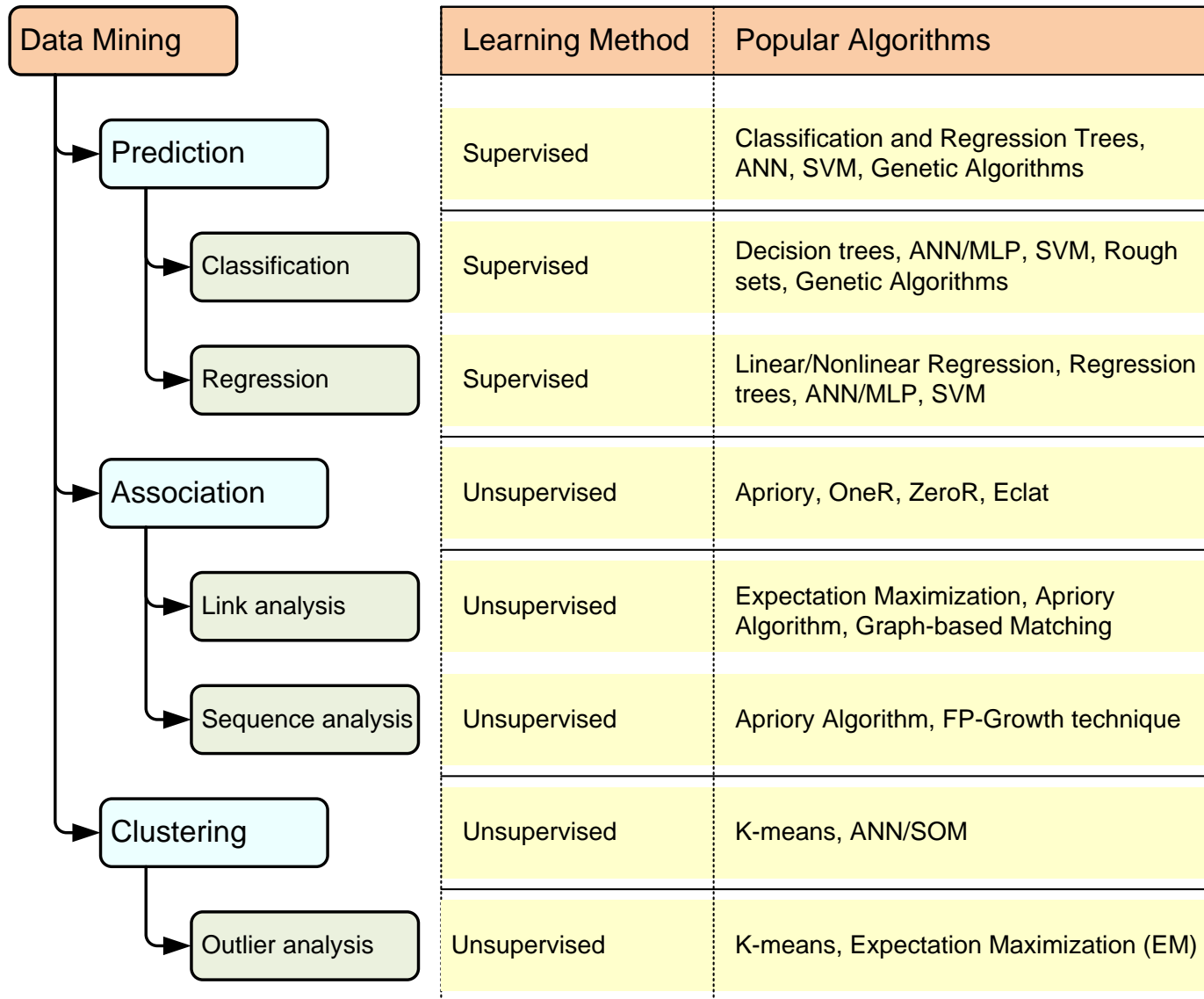
作業與學期成績計算方式

- 批改作業篇數
 - 2篇 (Team Term Project)
- 學期成績計算方式
 - 期中評量：30 % (期中報告)
 - 期末評量：30 % (期末報告)
 - 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
- 3-5 人為一組
 - 分組名單於 2013.03.07 (四) 課程下課時繳交
 - 由班代統一收集協調分組名單

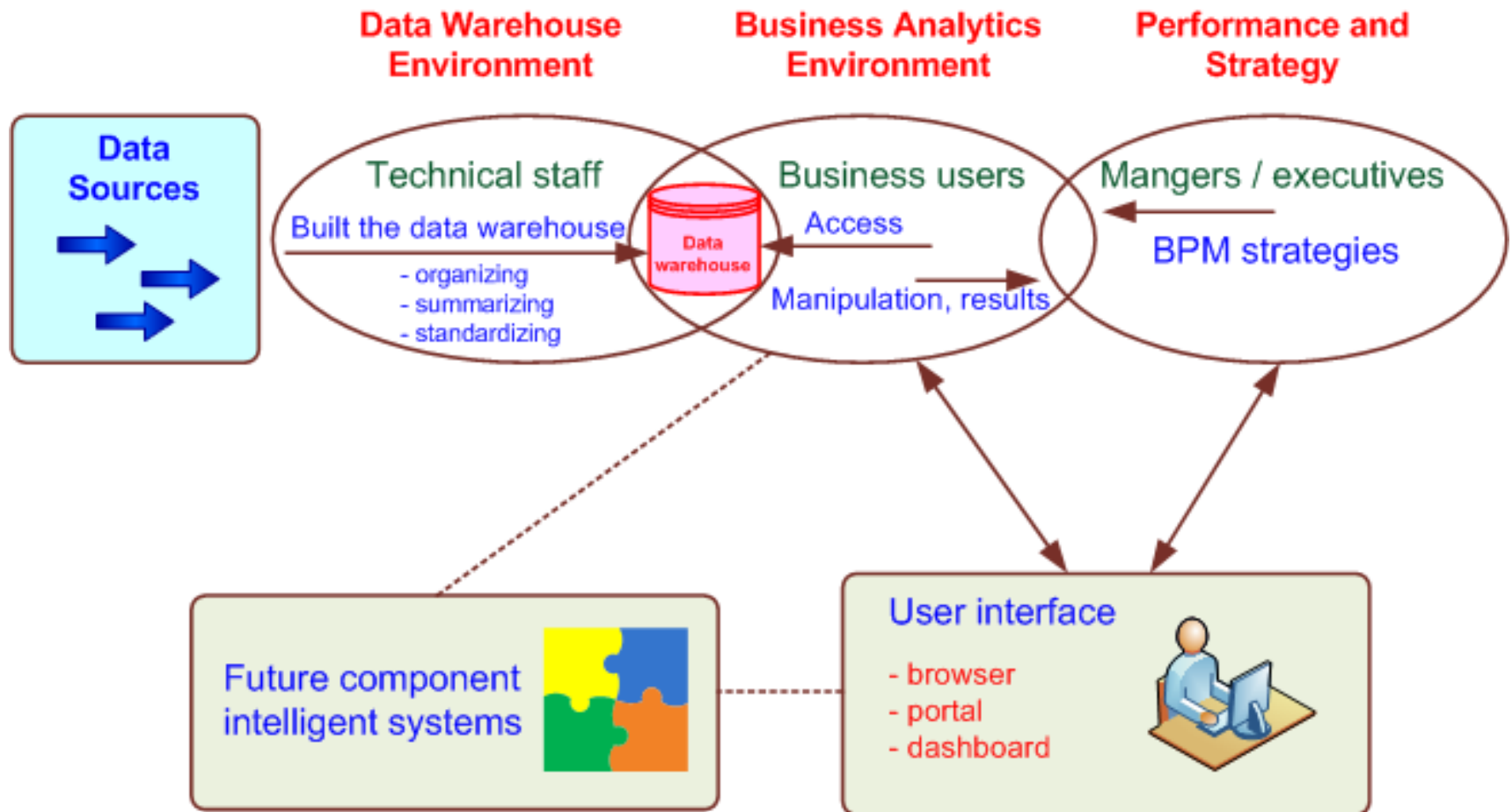
A Taxonomy for Data Mining Tasks



The Evolution of BI Capabilities



A High-Level Architecture of BI



Mining the Social Web: Analyzing Data from Facebook, Twitter, LinkedIn, and Other Social Media Sites

*Analyzing Data from Facebook, Twitter, LinkedIn,
and Other Social Media Sites*



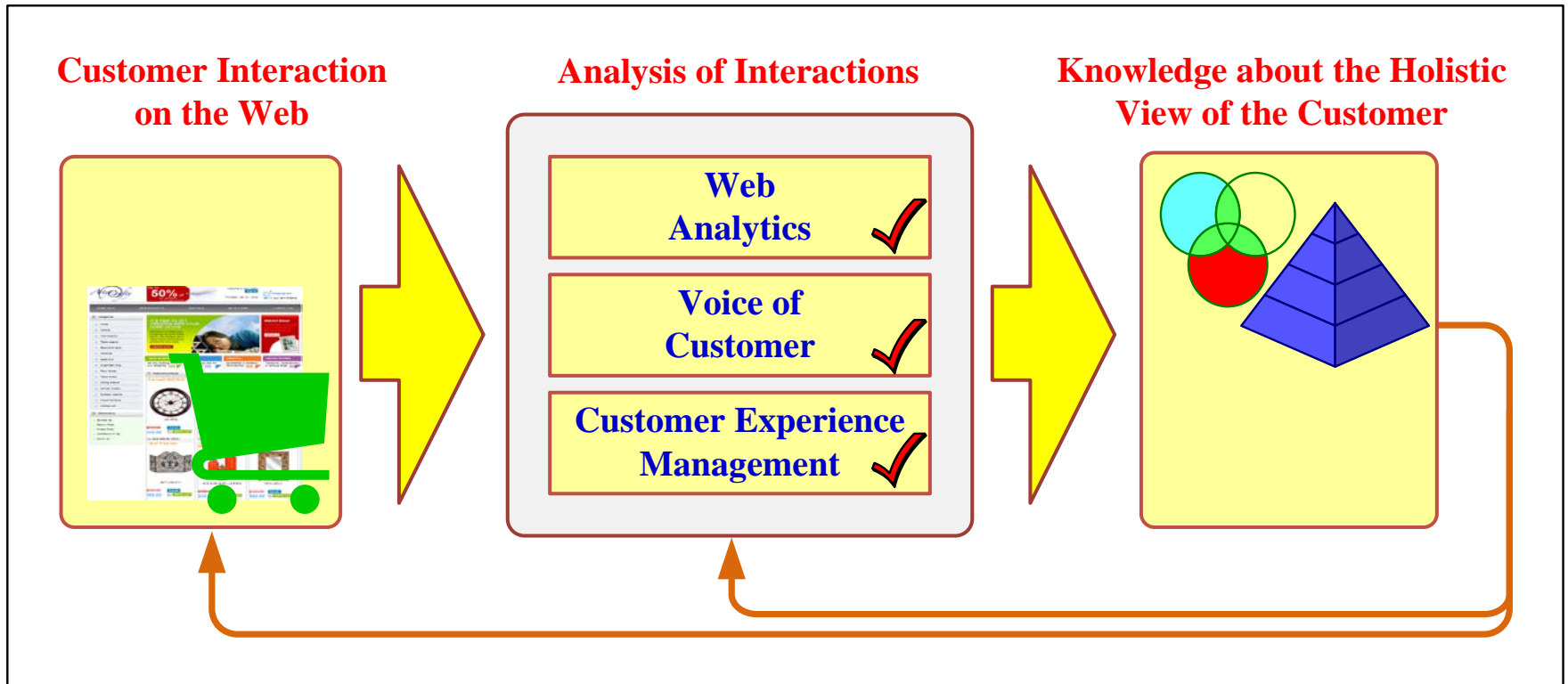
Mining the
Social Web

O'REILLY®

Matthew A. Russell

Web Mining Success Stories

- Amazon.com, Ask.com, Scholastic.com, ...
- Website Optimization Ecosystem



Top 10 CIO Technology Priorities in 2013

Top 10 Technology Priorities	Ranking
Analytics and business intelligence	1
Mobile technologies	2
Cloud computing (SaaS, IaaS, PaaS)	3
Collaboration technologies (workflow)	4
Legacy modernization	5
IT management	6
CRM	7
Virtualization	8
Security	9
ERP Applications	10

Top 10 CIO Business Priorities in 2013

Top 10 Business Priorities	Ranking
Increasing enterprise growth	1
Delivering operational results	2
Reducing enterprise costs	3
Attracting and retaining new customers	4
Improving IT applications and infrastructure	5
Creating new products and services (innovation)	6
Improving efficiency	7
Attracting and retaining the workforce	8
Implementing analytics and big data	9
Expanding into new markets and geographies	10

Summary

- This course introduces the **fundamental concepts** and **applications technology** of data mining.
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Contact Information

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