

大數據行銷研究

Big Data Marketing Research



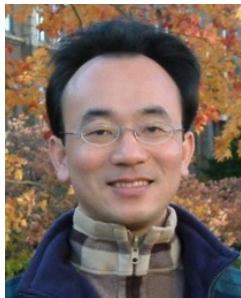
Tamkang
University
淡江大學

大數據行銷研究課程介紹 (Course Orientation for Big Data Marketing Research)

1051BDMR01

MIS EMBA (M2262) (8638)

Thu, 12,13,14 (19:20-22:10) (D409)



Min-Yuh Day

戴敏育

Assistant Professor

專任助理教授

Dept. of Information Management, Tamkang University

淡江大學 資訊管理學系

<http://mail.tku.edu.tw/myday/>

2016-09-23



淡江大學105學年度第1學期

課程教學計畫表

Fall 2016 (2016.09 - 2017.01)

- 課程名稱：大數據行銷研究
(Big Data Marketing Research)
- 授課教師：戴敏育 (Min-Yuh Day)
- 開課系級：資管所碩專班 (TLMXJ1A)
- 開課資料：選修 單學期 3 學分 (3 Credits, Elective)
- 上課時間：週五 12,13,14 (Fri 19:20-22:10)
- 上課教室：D409 (淡江大學台北校園)

課程簡介

- 本課程介紹大數據行銷研究的
基本概念及研究議題。
- 課程內容包括
 - 資料科學與大數據行銷
 - 大數據行銷分析與研究
 - 測量構念測量與量表
 - 探索性因素分析、確認性因素分析
 - 社群運算與大數據分析
 - 社會網路分析、量測與實務
 - 大數據情感分析
 - 金融科技行銷研究
 - 大數據行銷個案分析

Course Introduction

- This course introduces the **fundamental concepts** and **research issues** of **big data marketing research**.
- Topics include
 - Data Science and Big Data Marketing
 - Big Data Marketing Analytics and Research
 - Measuring the Construct
 - Measurement and Scaling
 - Exploratory Factor Analysis
 - Confirmatory Factor Analysis
 - Social Computing and Big Data Analytics
 - Measurements and Practices of Social Network Analysis
 - Big Data Sentiment Analysis
 - FinTech Marketing Research
 - Case Study on Big Data Marketing

課程目標 (Objective)

- 瞭解及應用大數據行銷研究
基本概念與研究議題。
(Understand and apply the fundamental concepts and research issues of big data marketing research.)
- 進行大數據行銷研究相關之資訊管理研究。
(Conduct information systems research in the context of big data marketing research.)

課程大綱 (Syllabus)

| 週次 (Week) | 日期 (Date) | 內容 (Subject/Topics) |
|-----------|------------|---|
| 1 | 2016/09/16 | 中秋節 (調整放假一天) (Mid-Autumn Festival Holiday)(Day off) |
| 2 | 2016/09/23 | 大數據行銷研究課程介紹 (Course Orientation for Big Data Marketing Research) |
| 3 | 2016/09/30 | 資料科學與大數據行銷 (Data Science and Big Data Marketing) |
| 4 | 2016/10/07 | 大數據行銷分析與研究 (Big Data Marketing Analytics and Research) |
| 5 | 2016/10/14 | 測量構念 (Measuring the Construct) |
| 6 | 2016/10/21 | 測量與量表 (Measurement and Scaling) |

課程大綱 (Syllabus)

| 週次 (Week) | 日期 (Date) | 內容 (Subject/Topics) |
|-----------|------------|---|
| 7 | 2016/10/28 | 大數據行銷個案分析 I (Case Study on Big Data Marketing I) |
| 8 | 2016/11/04 | 探索性因素分析 (Exploratory Factor Analysis) |
| 9 | 2016/11/11 | 確認性因素分析 (Confirmatory Factor Analysis) |
| 10 | 2016/11/18 | 期中報告 (Midterm Presentation) |
| 11 | 2016/11/25 | 社群運算與大數據分析 (Social Computing and Big Data Analytics) |
| 12 | 2016/12/02 | 社會網路分析 (Social Network Analysis) |

課程大綱 (Syllabus)

| 週次 (Week) | 日期 (Date) | 內容 (Subject/Topics) |
|-----------|------------|--|
| 13 | 2016/12/09 | 大數據行銷個案分析 II (Case Study on Big Data Marketing II) |
| 14 | 2016/12/16 | 社會網絡分析量測與實務 (Measurements and Practices of Social Network Analysis) |
| 15 | 2016/12/23 | 大數據情感分析 (Big Data Sentiment Analysis) |
| 16 | 2016/12/30 | 金融科技行銷研究 (FinTech Marketing Research) |
| 17 | 2017/01/06 | 期末報告 I (Term Project Presentation I) |
| 18 | 2017/01/13 | 期末報告 II (Term Project Presentation II) |

教學方法與評量方法

- 教學方法
 - 講述、討論、賞析、模擬、問題解決
- 評量方法
 - 實作、報告、上課表現

教材課本

- 教材課本
 - 講義 (Slides)
 - 大數據行銷研究相關個案與論文
(Cases and Papers related to Big Data Marketing Research)

參考書籍

- **Big Data Marketing:** Engage Your Customers More Effectively and Drive Value, Lisa Arthur, Wiley, 2013.
- **Marketing Research,** Carl McDaniel Jr. and Roger Gates, Wiley, 2011.
- **Data Science for Business:** What you need to know about data mining and data-analytic thinking, Foster Provost and Tom Fawcett, O'Reilly, 2013
- **Marketing Data Science:** Modeling Techniques in Predictive Analytics with R and Python, Thomas W. Miller, Pearson FT Press, 2015
- **Creating Value with Big Data Analytics:** Making Smarter Marketing Decisions, Peter C. Verhoef and Edwin Kooge, Routledge, 2016
- **Predictive Marketing:** Easy Ways Every Marketer Can Use Customer Analytics and Big Data, Omer Artun and Dominique Levin, Wiley, 2015
- **Digital Marketing Analytics:** Making Sense of Consumer Data in a Digital World, Chuck Hemann and Ken Burbary, Que. 2013.

作業與學期成績計算方式

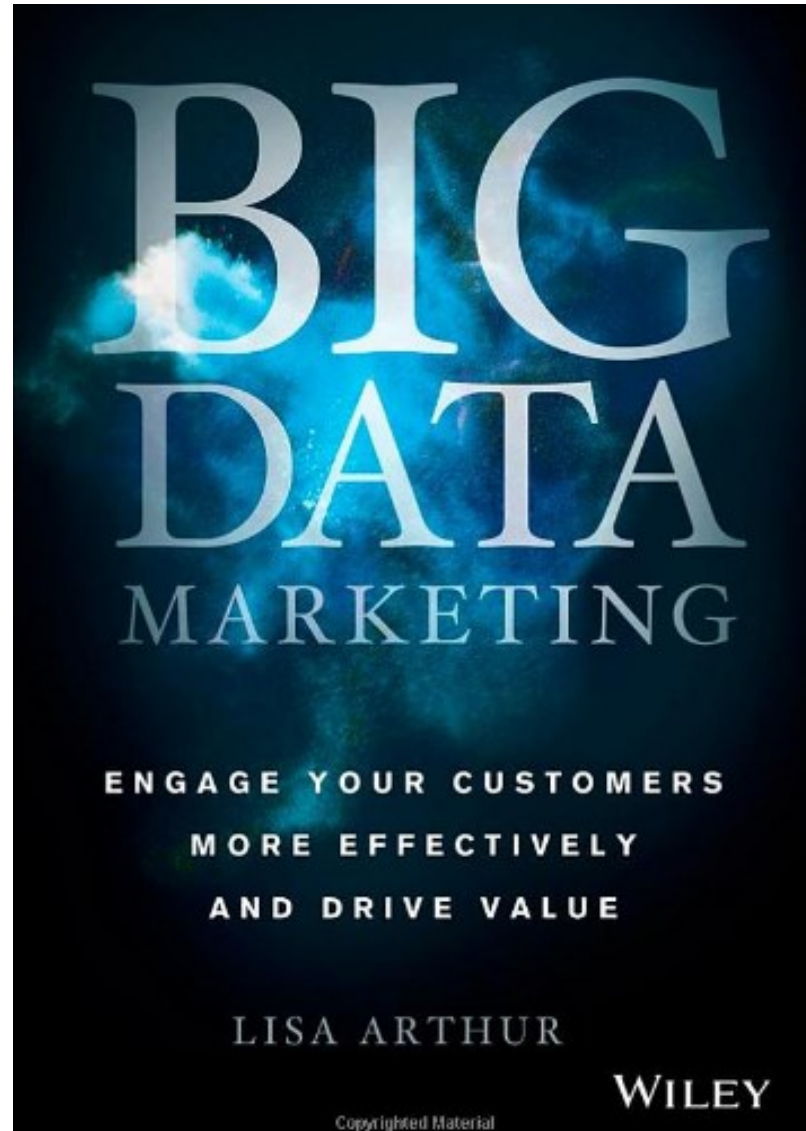
- 作業篇數
 - 3篇
- 學期成績計算方式
 - 期中評量：30 %
 - 期末評量：30 %
 - 其他（課堂參與及報告討論表現）：40 %

Big Data Marketing Research

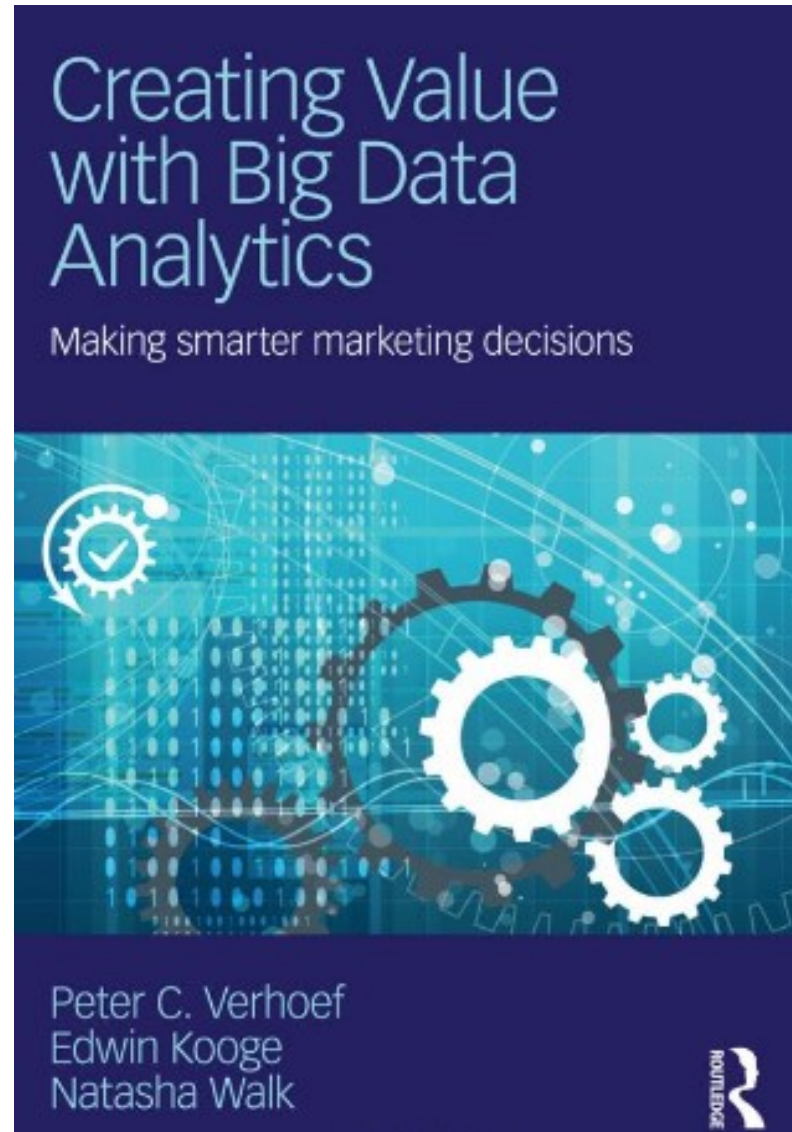
Big Data Marketing



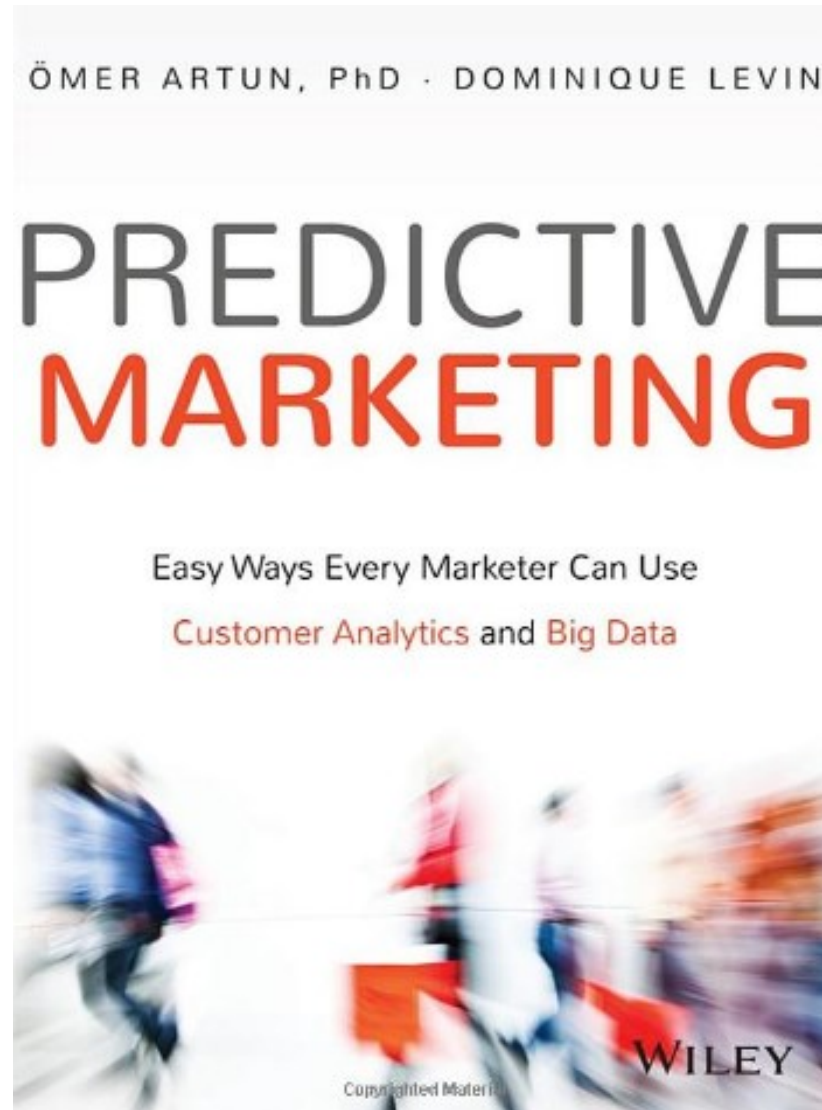
Big Data Marketing:
Engage Your Customers More Effectively and Drive Value,
Lisa Arthur, Wiley, 2013.



Creating Value with Big Data Analytics:
Making Smarter Marketing Decisions,
Peter C. Verhoef and Edwin Kooge, Routledge, 2016



Predictive Marketing: Easy Ways Every Marketer Can Use
Customer Analytics and Big Data,
Omer Artun and Dominique Levin, Wiley, 2015



Data Science for Business: What you need to know about data mining and data-analytic thinking, Foster Provost and Tom Fawcett, O'Reilly, 2013

"A must-read resource for anyone who is serious about embracing the opportunity of big data."
—Craig Vaughan, Global Vice President, SAP

Data Science *for* Business

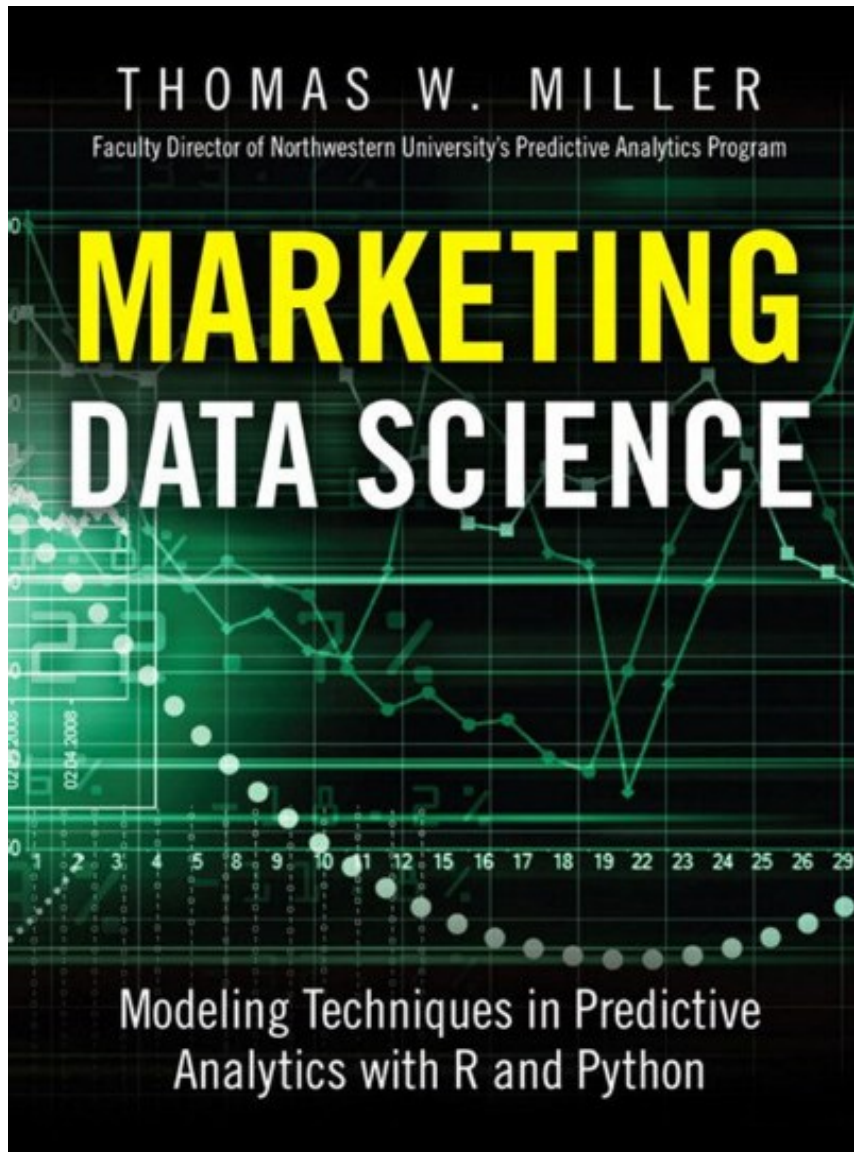
What You Need to Know
About Data Mining and
Data-Analytic Thinking



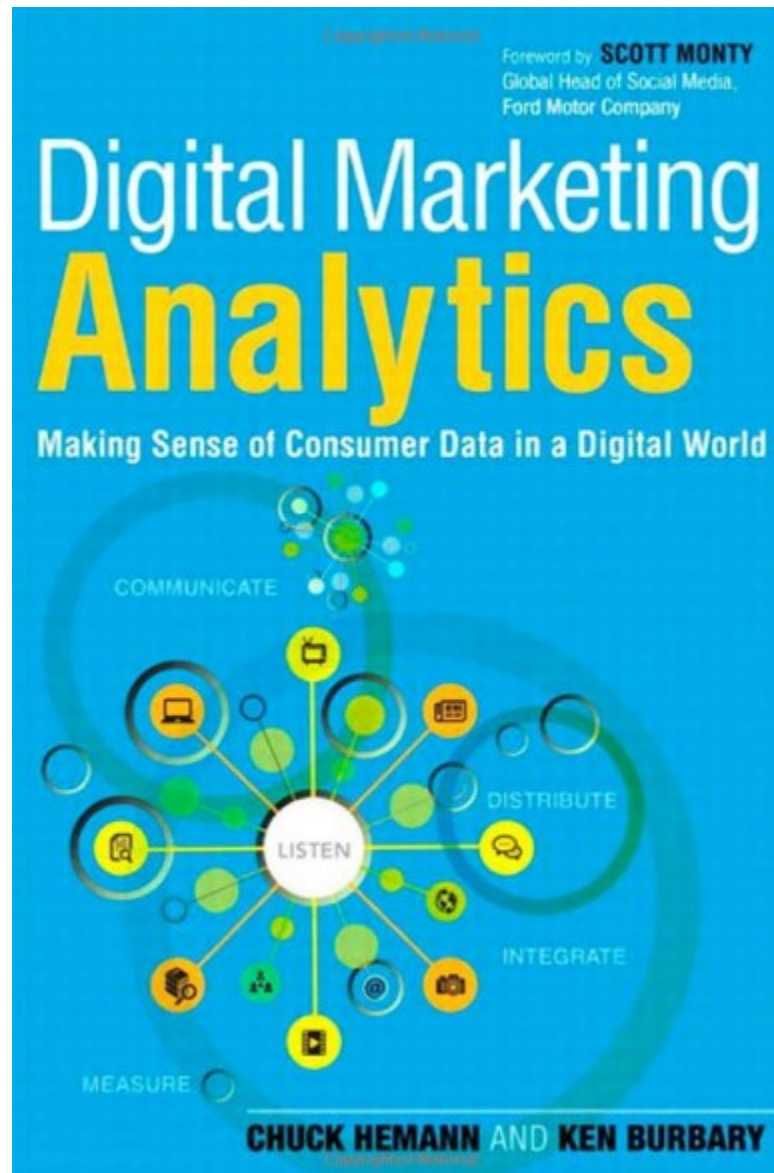
Foster Provost & Tom Fawcett

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Marketing Data Science: Modeling Techniques in Predictive Analytics with R and Python,
Thomas W. Miller, Pearson FT Press, 2015



Predictive Marketing: Easy Ways Every Marketer Can Use Customer Analytics and Big Data, Omer Artun and Dominique Levin, Wiley, 2015



The FINTECH Book: The Financial Technology Handbook for
Investors, Entrepreneurs and Visionaries,
Susanne Chishti and Janos Barberis, Wiley, 2016.



Marketing

Marketing

**“Meeting
needs
profitably”**

Marketing

“**Marketing** is an organizational function and a set of processes for creating, communicating, and delivering **value** to customers and for **managing customer relationships** in ways that benefit the organization and its stakeholders.”

(Kotler & Keller, 2008)

Marketing Management

“Marketing management is the art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value.”
(Kotler & Keller, 2008)

Marketing Research

“Marketing Research

is the

planning, collection, and analysis of **data**

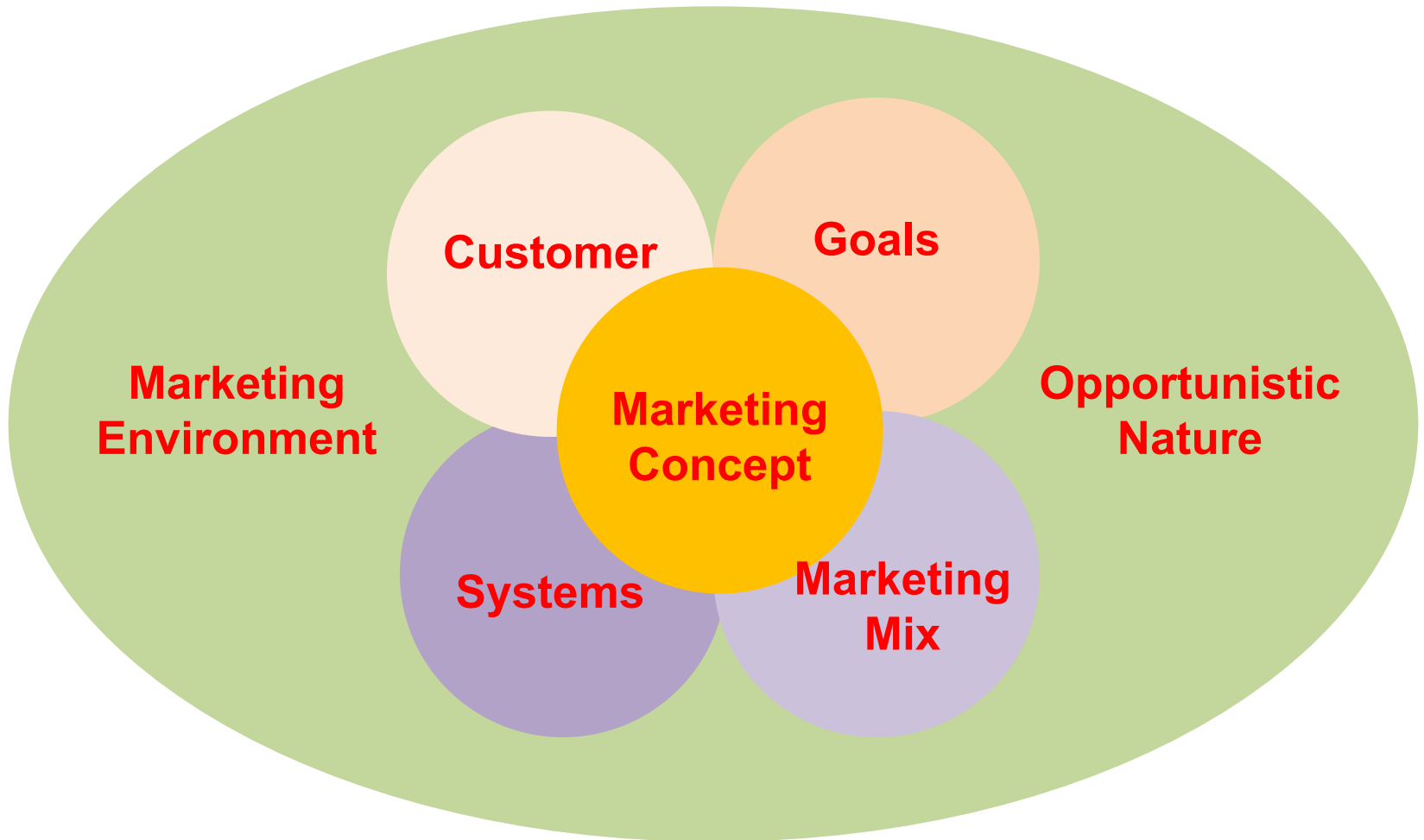
relevant to **marketing decision making**

and

the **communication of the results**

of this **analysis to management.**”

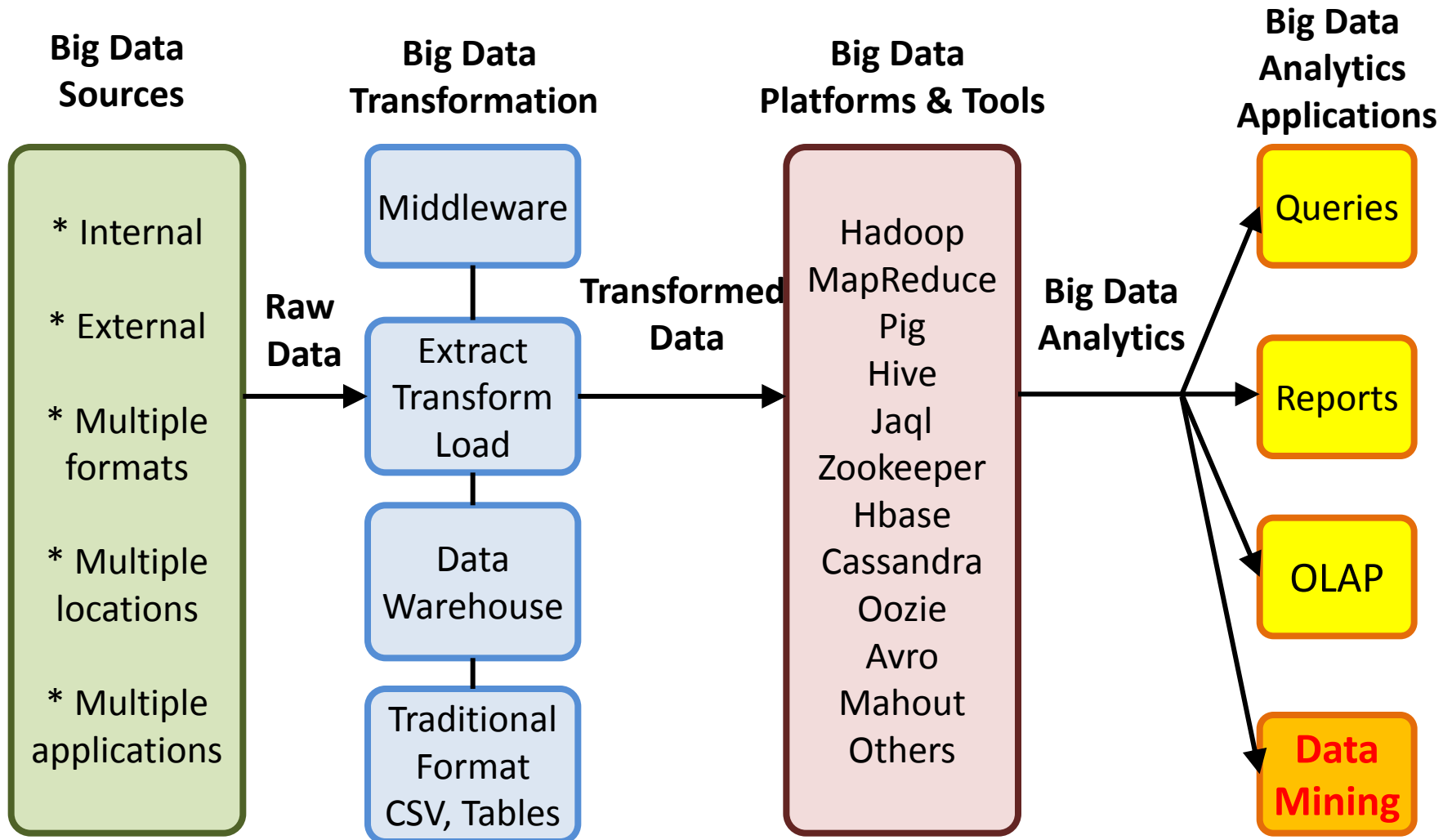
The Nature of Marketing Research



Marketing Research

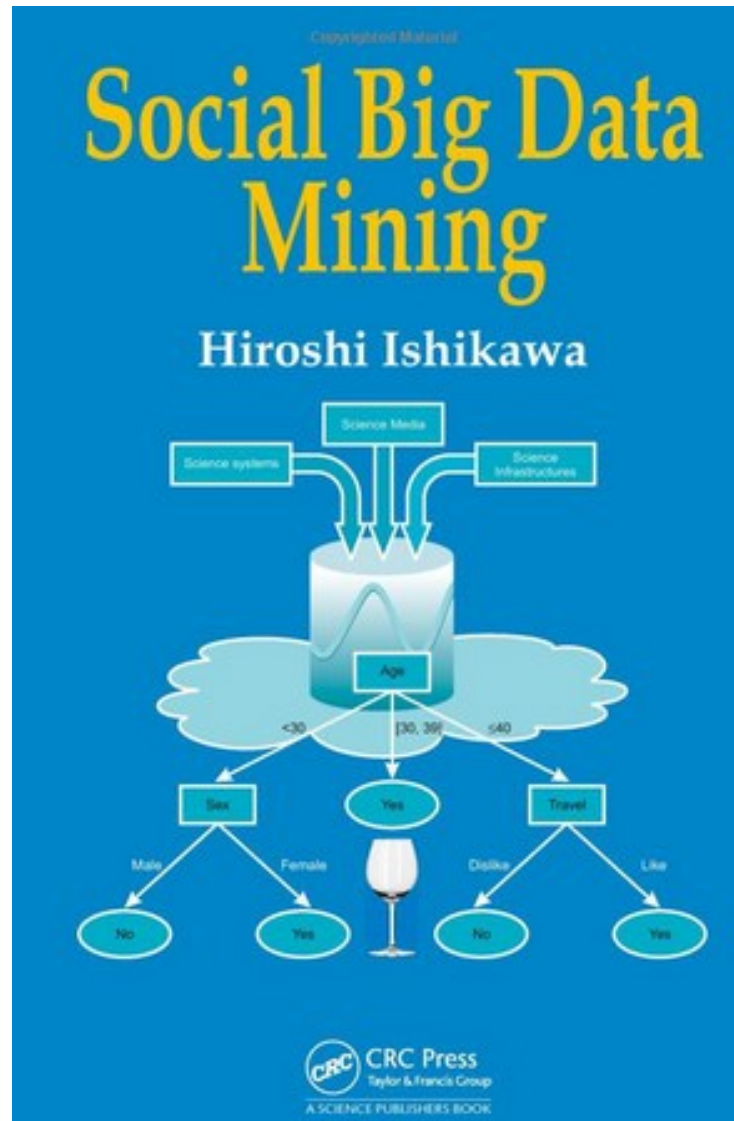
**systematic design, collection,
analysis, and reporting of
data and findings
relevant to a
specific marketing situation
facing the company.**

Architecture of Big Data Analytics



Social Big Data Mining

(Hiroshi Ishikawa, 2015)



Big Data Landscape 2016

Infrastructure

Hadoop On-Premise
 cloudera Hortonworks
 MMAPR Pivotal
 IBM InfoSphere
 splunk jethro

Hadoop in the Cloud
 amazon web services Google Cloud Platform
 Microsoft Azure IBM InfoSphere
 CAZENA altilscale
 Quale xplenty

Spark
 databricks
 GridGain
 TACHYON NEXUS

Cluster Services
 amazon web services
 Kubernetes
 HPCC SYSTEMS docker
 MESOSPHERE
 Core OS pepperdata
 StackIQ

Analytics

Analyst Platforms
 Palantir
 AYASDI
 Quid enigma
 Digital Reasoning
 ORBITAL INSIGHT

Analytics Platforms
 Microsoft
 guavus
 Datameer
 interana

Data Science Platforms
 context relevant
 CONTINUUM DataRobot
 Alpine ADATAO
 MODE ploity
 dataiku Ionian
 DOMINO sense
 yhat ALGORITHMIA

Visualization
 +ableau
 Google Cloud Platform
 Roambi
 Qlik
 CHARTIO

Applications

Sales & Marketing
 RADIUS Gainsight
 bloomreach Zeta
 livefyre blueyonder
 kahuna Lattice
 persado infer sense
 AVISO ACTIONIQ
 QUANTIFIND ENGA GIO

Customer Service
 MEDALLIA
 ATTENITY CLARABRIDGE
 STELLAService
 NGDATA Preact
 DigitalGenius wiseia
 appurri
 fuse machines

Human Capital
 gild
 Connectifier
 textio
 entelo
 hiQ

Legal
 RAVEL
 JUDICATA
 Everlaw
 Brevia
 PREMIONION

NoSQL Databases
 amazon DynamoDB Google Cloud Platform
 Microsoft Azure ORACLE
 mongoDB MarkLogic
 DATASTAX
 KERO SPIKE Couchbase
 SequoiaDB redislabs influxdata

NewSQL Databases
 SAP HANA Clustrix Pivotal
 paradigm4
 memsql nuODB
 MariaDB VOLTDB citusdata
 deopdb Trafodion Cockroach LABS

BI Platforms
 Power BI amazon web services
 DOMO
 Wave Analytics
 GoodData birst
 kyvos insights
 platfora looker
 atscale ARCADIA
 SIBSENSE

Statistical Computing
 SAS
 SPSS
 MATLAB

Log Analytics
 splunk
 sumologic
 kibana
 CLOUD PHYSICS
 loggly

Social Analytics
 NETBASE
 DATA SIFT
 tracx bitly
 syntheso
 bottlenose
 simplereach

Ad Optimization
 MediaMath Integral
 Ad Science
 rocketfuel
 OpenX theTradeDesk
 Adgorithms
 Liventent dstillery
 DataXu Appier TAFAD

Security
 CYLANCE
 CounterTack cyberason
 ThreatMetrix
 AREA 1 SECURITY SentinelOne
 Recorded Future Guardian Analytics
 FORTSCALE sift science
 Kaybase feedzai SIGNIFYD

Vertical AI Applications
 facebook
 Clara
 KASIST
 lumiata

Graph Databases
 neo4j
 OrientDB
 InfiniteGraph

MPP Databases
 TERADATA
 VERTICA
 NETEZZA
 kognitio
 dremio

Cloud EDW
 amazon web services Google Cloud Platform
 Microsoft Azure Pivotal
 snowflake
 PAXATA
 Infoworks

Data Transformation
 alteryx
 TRIFACTA
 tamer
 StreamSets
 Alation

Data Integration
 informatica
 Put potential to work:
 MuleSoft
 snapLogic
 BedrockData

Real-Time
 amazon web services
 METAMARKETS
 confluent
 DATATORRENT
 dataArtisans

Machine Learning
 Azure Machine Learning
 H2O
 SKYTREE
 rapidminer DATASIRI
 deepnlp VISERIE
 PredictionIO glowfish

Speech & NLP
 NarrativeScience
 api.ai NUANCE
 Gridspace
 semantic machines
 cortico.io
 mindmeld
 IDIBON yseop

Horizontal AI
 IBM Watson
 Cortana sentient
 VIV
 nervana
 Numenta
 MetaMind clarifai
 DEXTRON Cosmotech

Publisher Tools
 outbrain
 mixpanel
 Chartbeat
 yieldbot
 Yieldmo

Govt/ Regulation
 Socrata
 OPENGOV
 FN FiscalNote
 enigma
 PREPOL mark43
 OpenDataSoft

Finance
 affirm
 LendingClub
 OnDeck Kreditech
 zest finance LendUp Kabbage
 tadmark
 ZUORA Dataminr Lenddo
 KENSHC AIDYIA
 iSENTIUM
 Quantopian sentient

Management / Monitoring
 New Relic
 APPDYNAMICS
 actifio
 Numerify
 splunk
 DATADOG
 Trocana Anodot

Security
 TANIUM
 illumio
 CODE42
 DataGravity
 CipherCloud
 VECTRA
 sqrrl BlueTalon

Storage
 amazon web services Google Cloud Platform
 Microsoft Azure Pivotal
 panasas
 nimblestorage
 Qumulo

App Dev
 apigee
 CASK
 Typesafe
 CONCURRENT

Crowd-sourcing
 amazon mechanicalturk
 CrowdPower
 WorkFusion

Search
 hp Autonomy ORACLE
 ENDECA
 EXALEAD
 Lucidworks
 elastic ThoughtSpot
 MAANA swifttype
 Algolia SINEOQA

Data Services
 OPERA
 Mis Sigma
 DATA SCIENCE
 kaggle datascience
 DataKind

For Business Analysts
 OrigamiLogic
 ClearStory
 CIRRO
 import io

SMB / Commerce
 Google Analytics
 AMPITUDE RJMetrics
 BLUECORE
 sumAll granify
 Airtable
 retention custora

Education/ Learning
 KNEWTON
 Clever
 Declara
 PANORAMA
 knowTe

Life Sciences
 23andMe
 Pathway Genomics
 XRecombine
 KYRUS FLATIRON
 zymergen HealthTap
 METABIOTA ZEPHYR HEALTH ovia
 Gingerio transcriptic Glow
 entlic AiCure Atomwise

Industries
 OP@WER eHarmony
 RetailNext
 STITCH FIX
 WorkFusion
 BLUE RIVER
 TACHYUS
 SwiftKey
 Seeq FarmLogs
 HowGood
 select
 NIGHT MACHINE
 statmuse BOXEVER

Cross-Infrastructure/Analytics

amazon web services Google Microsoft IBM SAP SAS hp Autonomy vmware talent TIBCO TERADATA ORACLE NetApp

Open Source

Framework
 hadoop HADOOP HADOOP
 YARN Spark
 MESOS TEZ
 Flink CDAP

Query / Data Flow
 SLAMDATA
 DRILL
 Google Cloud Dataflow

Data Access
 cassandra
 HBASE
 mongoDB
 CouchDB
 riak
 OPENTSOB

Coordination
 talent
 Apache Zookeeper
 Apache Ambari

Real-Time
 STORM Spark
 APEX
 Flink
 TACHYON druid

Stat Tools
 R
 Scala
 Numpy
 SciPy

Machine Learning
 milib
 Apache SINGA
 MADlib
 Aerosolve
 Caffe
 FeatureFu
 DIMSUM
 mahout
 TensorFlow
 CNTK
 jupyter
 DL4J

Search
 elasticsearch
 Solr
 Lucene

Security
 Apache Ranger
 Zeppelin
 Visualization

Data Sources & APIs

Health
 Apple JAWBONE GARMIN
 practicefusion fitbit
 Withings VALIDIC netatmo
 kinsa Human API

IOT
 UPTAKE
 ThingWorx
 helium samsara
 AUGURY estimate

Financial & Economic Data
 Bloomberg DOW JONES
 YODLEE PREMISE S&P CAPITAL IQ
 quandl xignite CB INSIGHTS
 mattermark estimize PLAID

Air / Space / Sea
 PLANET LABS
 WINDWARD
 CRUISE SKYCATCH
 Airware DroneDeploy

Location/People/Entities
 GARMIN foursquare InsideView esri
 STREETLINE
 connecting the real world
 CARTODB factual PlaceIQ
 Crismon Hexagon placemeter BASIS Sense

Other
 qualtrics
 panjiva
 DATA.GOV

Incubators & Schools
 GA DataCamp
 INSIGHT METIS
 DataElite
 The Data Incubator

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FIRSTMARK

Summary

- This course introduces the **fundamental concepts** and **research issues** of **big data marketing research**.
- Topics include
 - Data Science and Big Data Marketing
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 - Measuring the Construct
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Contact Information

戴敏育 博士 (Min-Yuh Day, Ph.D.)

專任助理教授

淡江大學 資訊管理學系

電話：02-26215656 #2846

傳真：02-26209737

研究室：B929

地址：25137 新北市淡水區英專路151號

Email：myday@mail.tku.edu.tw

網址：<http://mail.tku.edu.tw/myday/>

