

Weeks 5 and 6: Smart Banking (BI & PM); Business Intelligence Systems; Information Systems Development

CB2500 Information Management

Smart Banking (BI)
Smart e-Services (ISSN)

Smart IS Auditing (ISA)
Smart Global Business (GBSM)

“Should banks close more branches or open more? Why?”

- How do global banks compete?
- Why should they hire you as a management trainee?



Study Questions / Intended Learning Outcomes

QX1: What is Smart Banking?

QX2: What is Smart e-Payment?

QX3: How would BI help in Smart Banking?

**Q9-1: How do organizations use Business Intelligence (BI)
Systems?**

**Q9-3: How do organizations use data warehouses and data
marts to acquire data?**

QX4: What are the common BI techniques?

QX5: Project management qualification?

Q12-3: What are the five phases of the SDLC?

QX6: What is change management?

Q12-2: Why is systems development difficult and risky?

QX1: What is Smart Banking



Video: <https://www.youtube.com/watch?v=1QUrDh14uQc>

QX1: What is Smart Banking

- Key Points:
 - Connectivity
 - Any where, time, device
 - Self-service / customer-centered service
- Global project, needs global partnership



How did they manage info (flow)?
e.g. self-service instead of staff servicing customers
→ benefit?

Seven features of banking



<https://www2.deloitte.com/jo/en/pages/financial-services/articles/2015-banking-outlook.html>

Growth

Growth will be a universal priority in 2015, yet strategies will vary by bank size and business line. Banks may want to think about:



- Investing in customer analytics
- Leveraging digital technologies to elevate the customer experience in both business and retail banking
- Determining whether or not prudent underwriting standards are overlooked
- Learning from nonbank technology firms and establish an exclusive partnership to create innovation and a competitive edge

Can you think of some concrete examples of banks using digital technology to improve customer experience?

Payments transformation

This year will be an evolutionary year as growth in contactless payments contributes to banks' role in the payments network while cutting further into interchange revenue and brand recognition. Banks may want to:



- Seek innovative ways to leverage customer spending data for specialized promotions and services
- Look for new ways to be top of wallet and differentiate the customer experience

What do you think about the current landscape of payment methods in HK?

Extra reading (optional): <https://www.jpmorgan.com/merchant-services/insights/reports/hong-kong>

Compliance and risk management

Meeting regulatory expectations will require management to extend its focus from improving specific processes to fully integrating risk management, compliance, and ethics into banks' culture. To do so banks may want to:

- Reinforce a strong “tone at the top”
- Encourage boards to challenge senior management’s activities
- Empower chief risk officers to pursue collaboration with business lines
- Incorporate risk management and compliance responsibilities into performance management programs and employee training



Data management

As the data and analytics function within banks evolves, institutions should be shifting toward a proactive stance to ward off further regulatory pressure. Banks should consider:

- Creating a central regulatory management office to help drive greater efficiencies
- Relying on chief data officers to establish tighter connections with front-office functions and derive greater value from data assets



What kind of your personal data do you think your bank has access to?

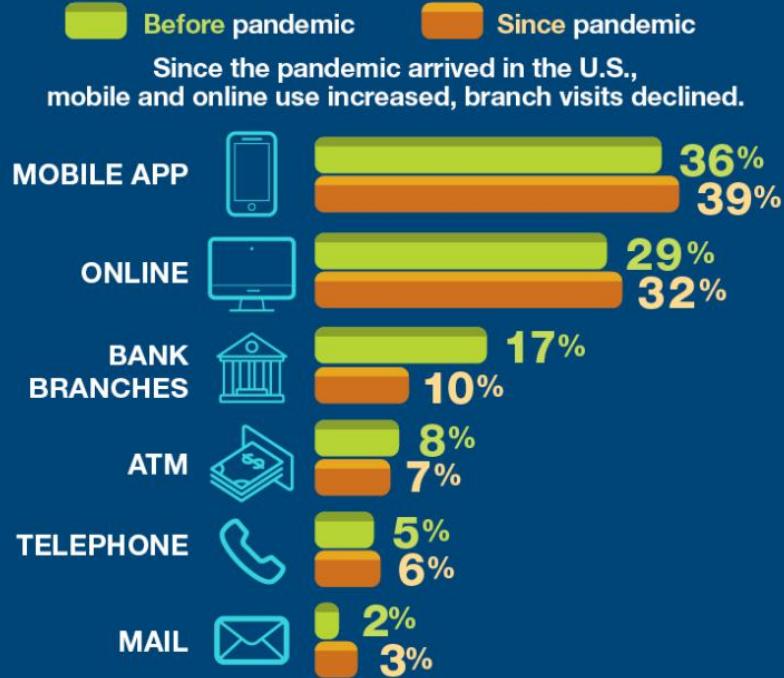
Cybersecurity

To improve cybersecurity in 2015, banks will be forced to devote greater resources to enhancing the security, vigilance, and resilience of their cybersecurity model and should consider:

- Adopting new methods, such as war gaming, attracting specialized talent, and increasing collaboration with other members of the ecosystem
- Beefing up their intelligence apparatus to detect new threats in a timely manner
- Expanding the role of the CISO to include clear and prompt communications with the board



How Americans Bank: Before and During COVID-19



BEFORE PANDEMIC

Gen Z (1997–2012)



Millennials (1981–1996)



Gen X (1965–1980)



Baby Boomers (1946–1964)



Journey of HSBC



Branches

ATM

1971

1966

Phone banking

1996

Internet banking

2000

Mobile banking

2010

QX2: What is Smart e-Payment?

- Types of payments for online purchases?
 - Credit cards



- Direct debits from bank accounts
- Stored value facilities (SVFs)



Direct Debits

- The purchase amount is debited directly from a bank account
- No need to apply for credit



Is Apple Pay an SVF?

Apple Pay



Your wallet. Without the wallet.

Gone are the days of searching for your wallet. The wasted moments finding the right card. The swiping and waiting. Now payments happen with a single touch.

Apple Pay will change how you pay with breakthrough contactless payment technology and unique security features built right into the devices you have with you every day. So you can use your iPhone 6 or Apple Watch to pay in an easy, secure, and private way.

Coming in October



Examples of Licensed SVFs in HK



WeChat Pay®

- More can be found: <https://www.hkma.gov.hk/eng/regulatory-resources/registers/register-of-svf-licensees/>
- SVFs by HK Monetary Authority (in Cantonese with English subtitles): <https://youtu.be/DV8KhSe-zLs>

The Economist: What does a cashless future mean?



Video: <https://www.youtube.com/watch?v=-0ph-pvCSPc>

UReply Q1

Based on the video, please name:

1. benefits of e-payments compared to cash
2. risks of e-payments compared to cash



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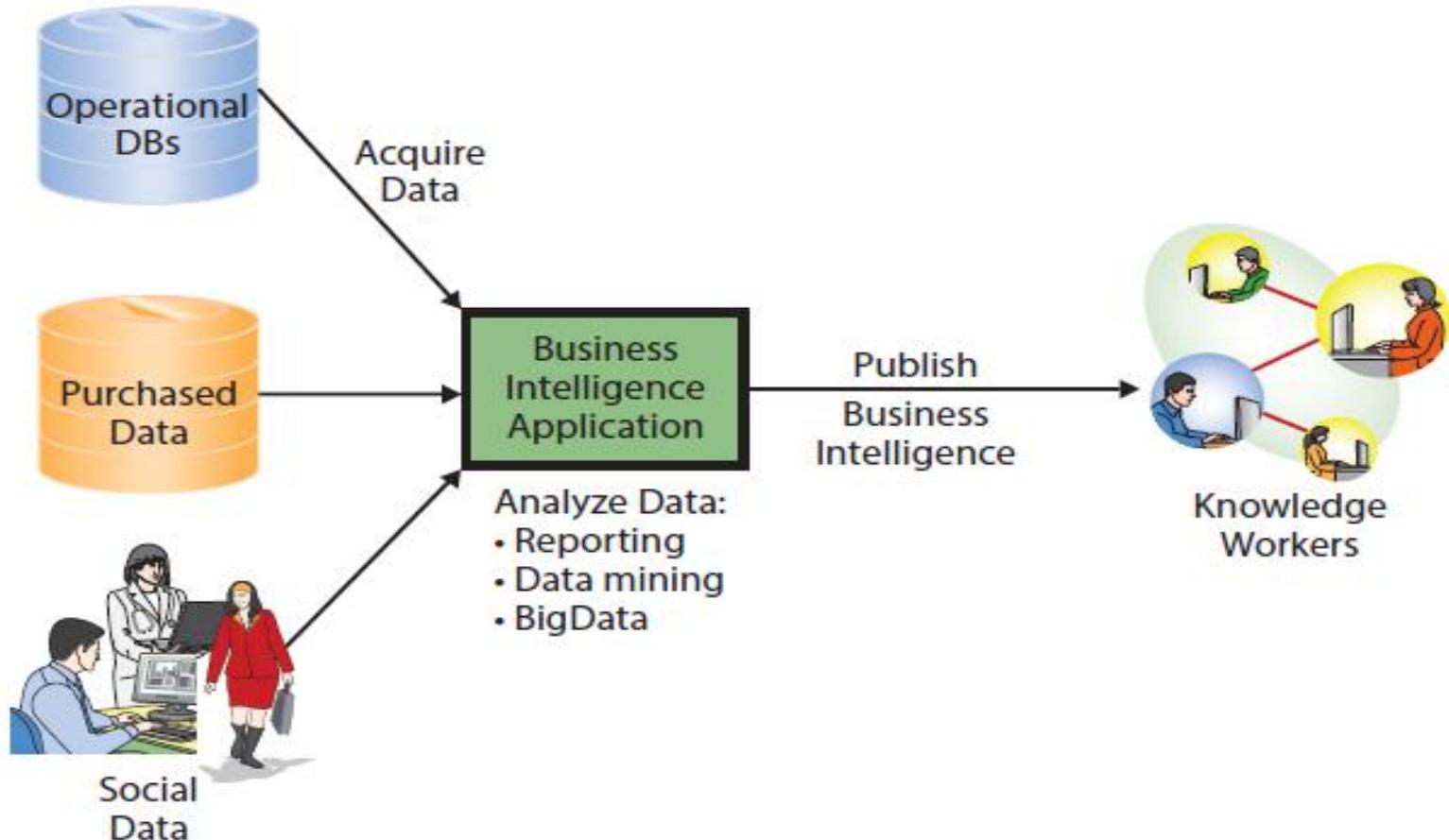
Smart Banking (**BI**)
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Q9-1: How do organizations use Business Intelligence (BI) Systems?

- “BI” refers to technologies, applications and practices for the collection, integration, analysis, and presentation of business information
- “Supporting decision making” = BI = “DDDSS”
- Business Intelligence means:
 - Timely
 - Accurate
 - High-Value
 - Actionable
 - Insights that come from internal (or external) data

Q9-1: How do organizations use Business Intelligence (BI) Systems?



How Do Organizations Use BI?

Task	Falcon Security Example
Project Management	Expand geographically.
Problem Solving	How can we save costs by rerouting drone flights?
Deciding	Which drones and equipment are in need of maintenance?
Informing	How do sales compare to our sales forecast?

BI Capabilities should include:

- “Tell me what happened...” 
- “Tell me what is happening...RIGHT NOW!” 
- “Tell me what likely to happen” 
- “Tell me what might have happened” 
- “Tell me something interesting and important (without me asking specific questions) 

What Are Typical Uses for BI?

- Identifying changes in purchasing patterns
 - Important life events cause customers to change what they buy...

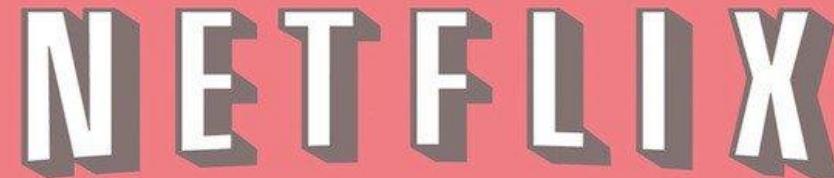


What Are Typical Uses for BI?

- BI for entertainment



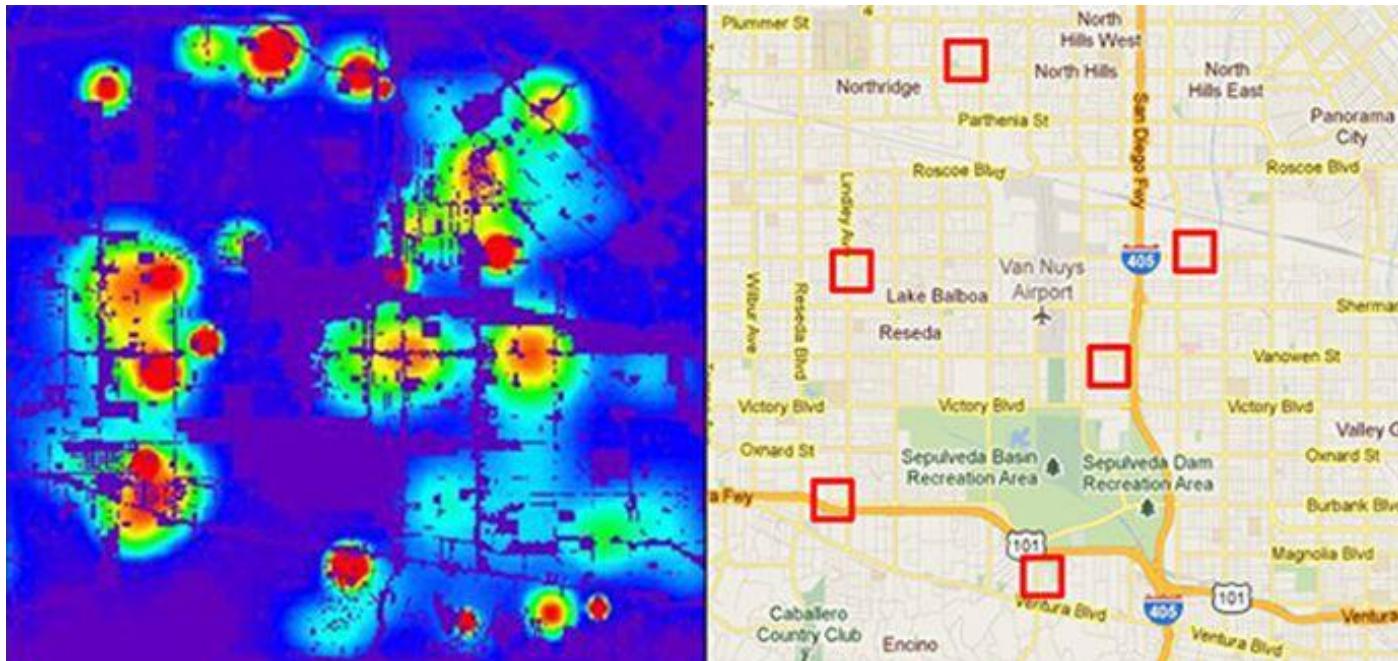
35% OF AMAZON'S REVENUE ARE GENERATED
BY IT'S RECOMMENDATION ENGINE.



75% OF USERS SELECT MOVIES BASED ON
NETFLIX'S RECOMMENDATIONS.

What Are Typical Uses for BI?

- Predictive policing



QX3: How would BI help in Smart Banking?

- Data available from different interactions
 - Transaction data from
 - Branch, ATM, Phone banking, Fax, E-banking, ...
- Implication?



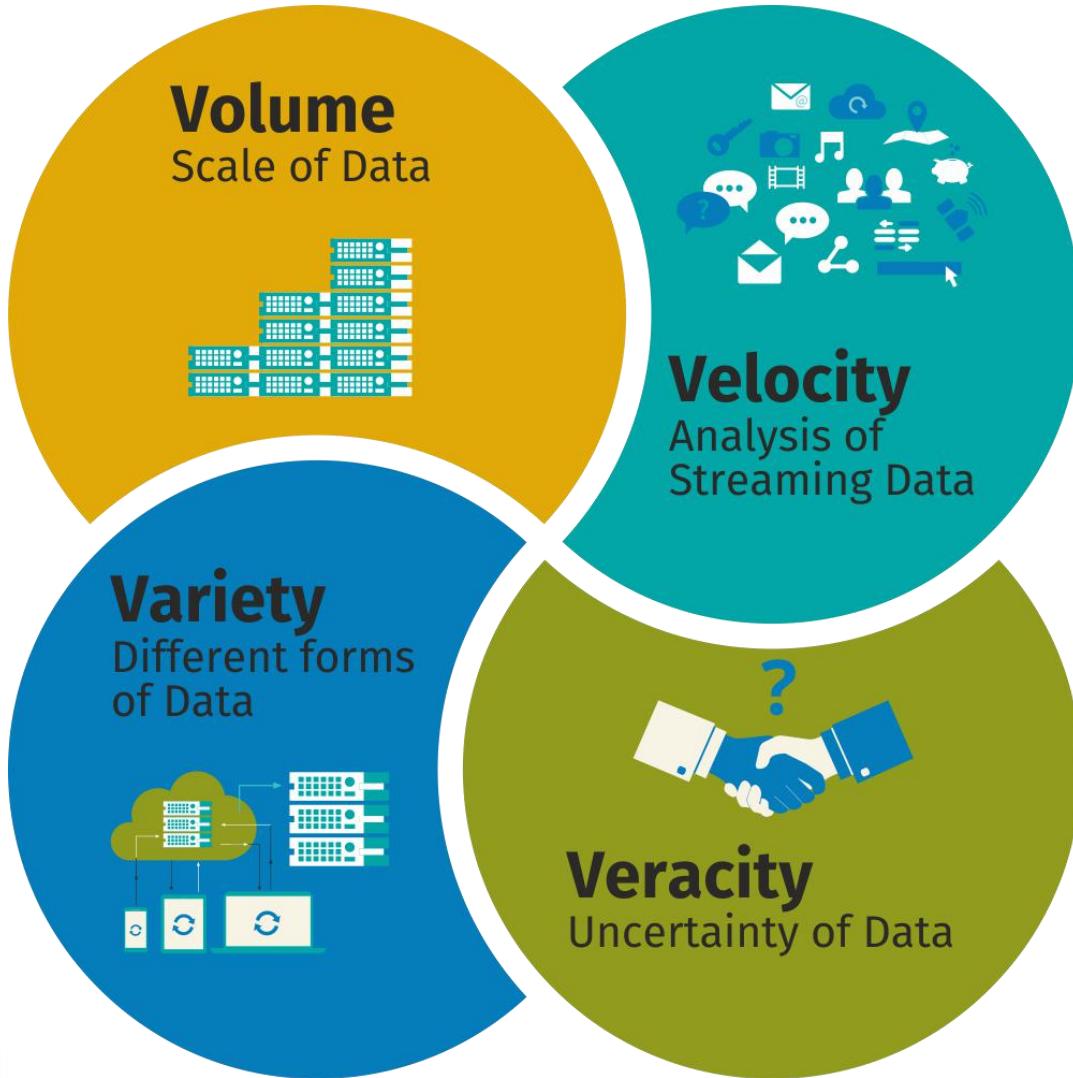
Do you have the mindset and skills in

1. understanding the (VERY LARGE AMOUNT OF) data?
2. create value from insights? → take action

If yes, banks need you.

If no, you are just the same as other BBA graduates (5,000 ppd/year??)

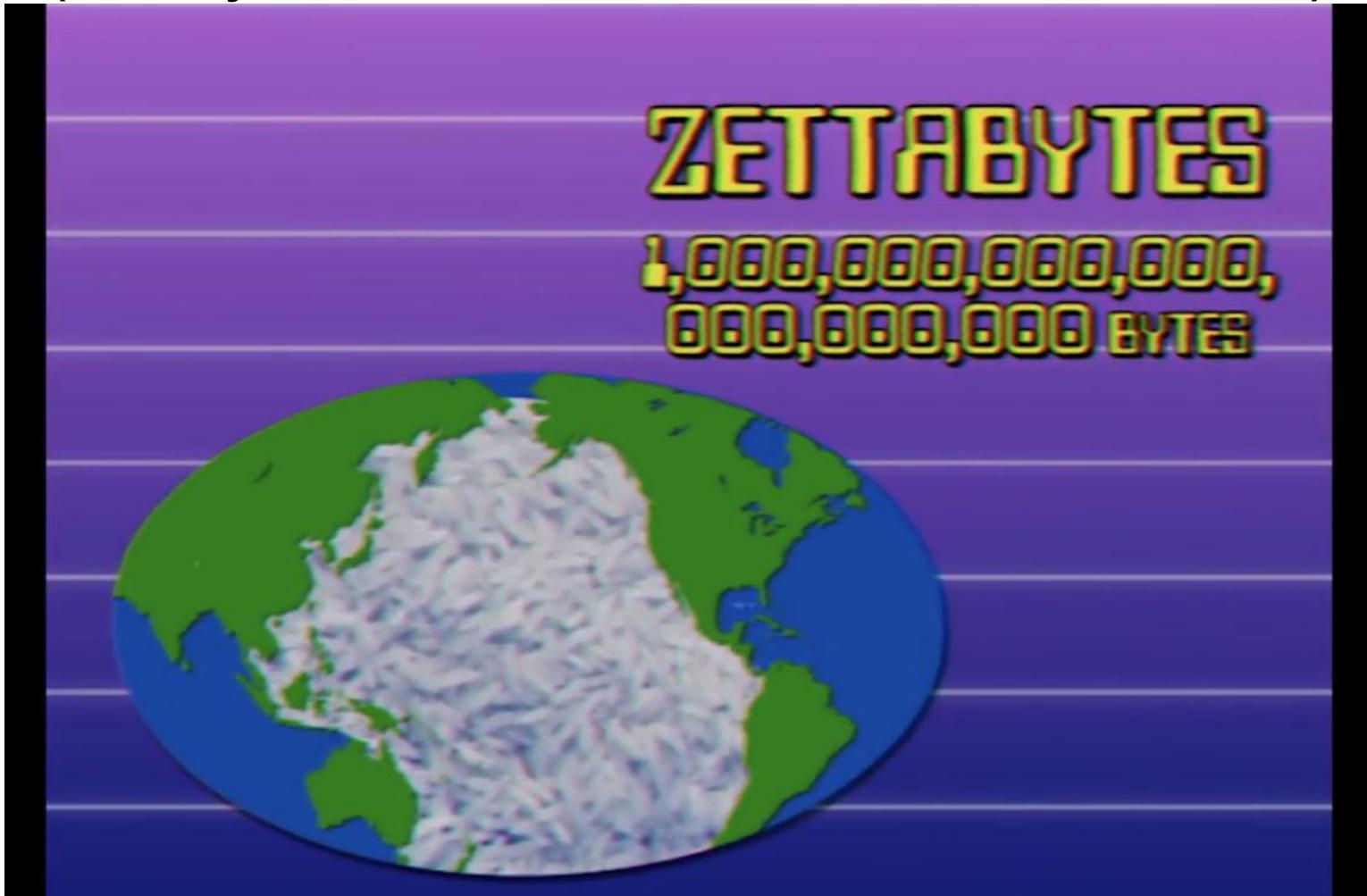
Big Data



***So how big is
big data?***

Is big data getting TOO big?

(Can you believe this is a 2016 video?)



Obama's take on the importance of data

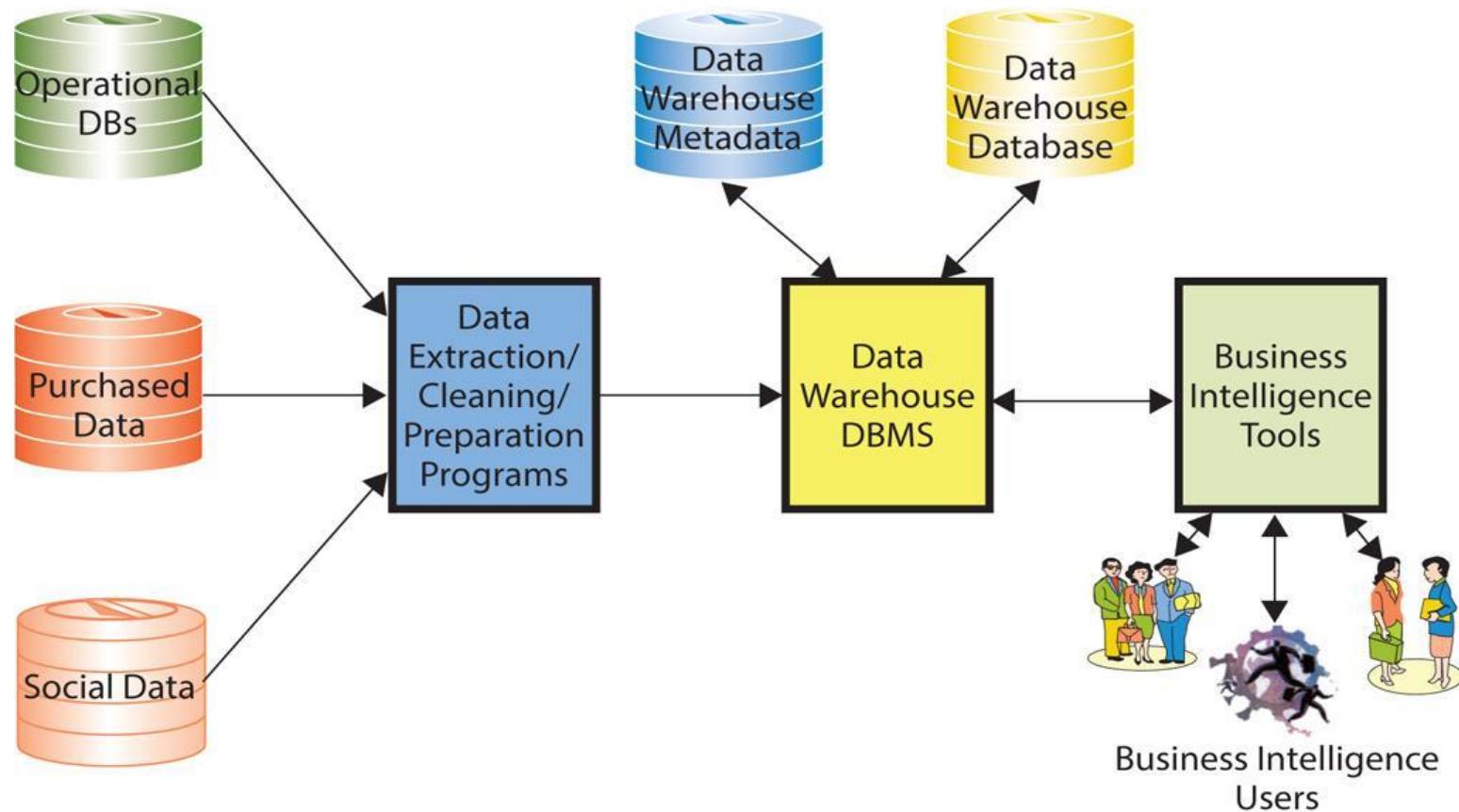


<https://www.youtube.com/watch?v=vbb-AjiXyh0>

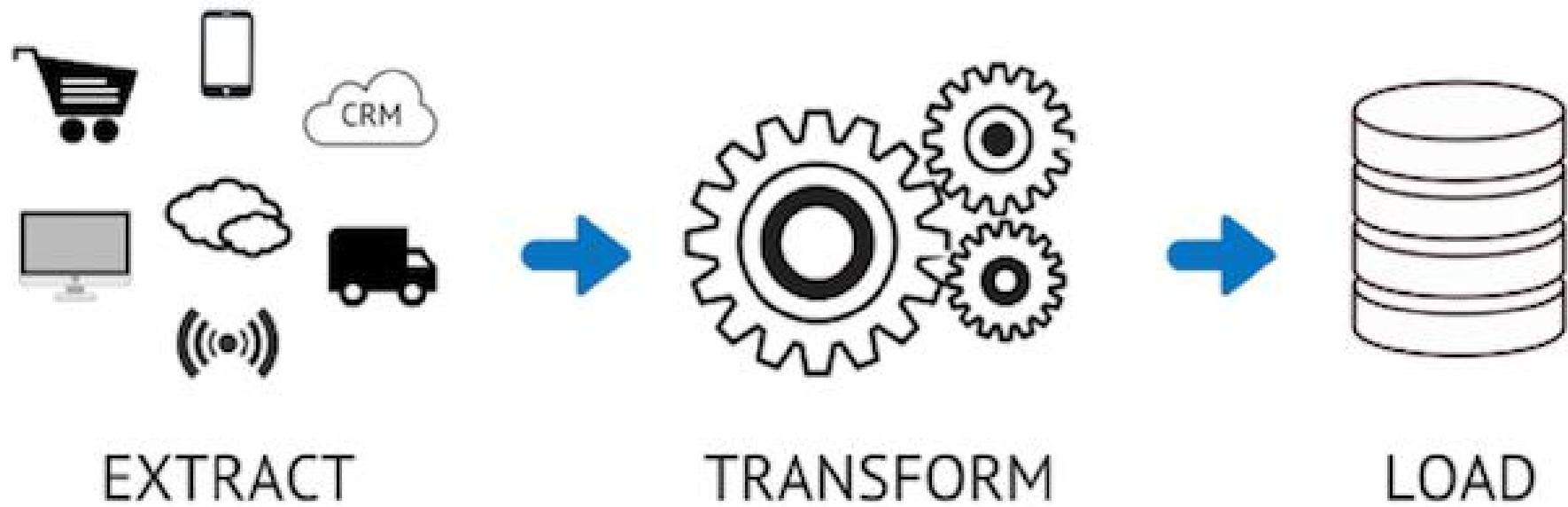


So, how do companies manage large amount of data using IS?

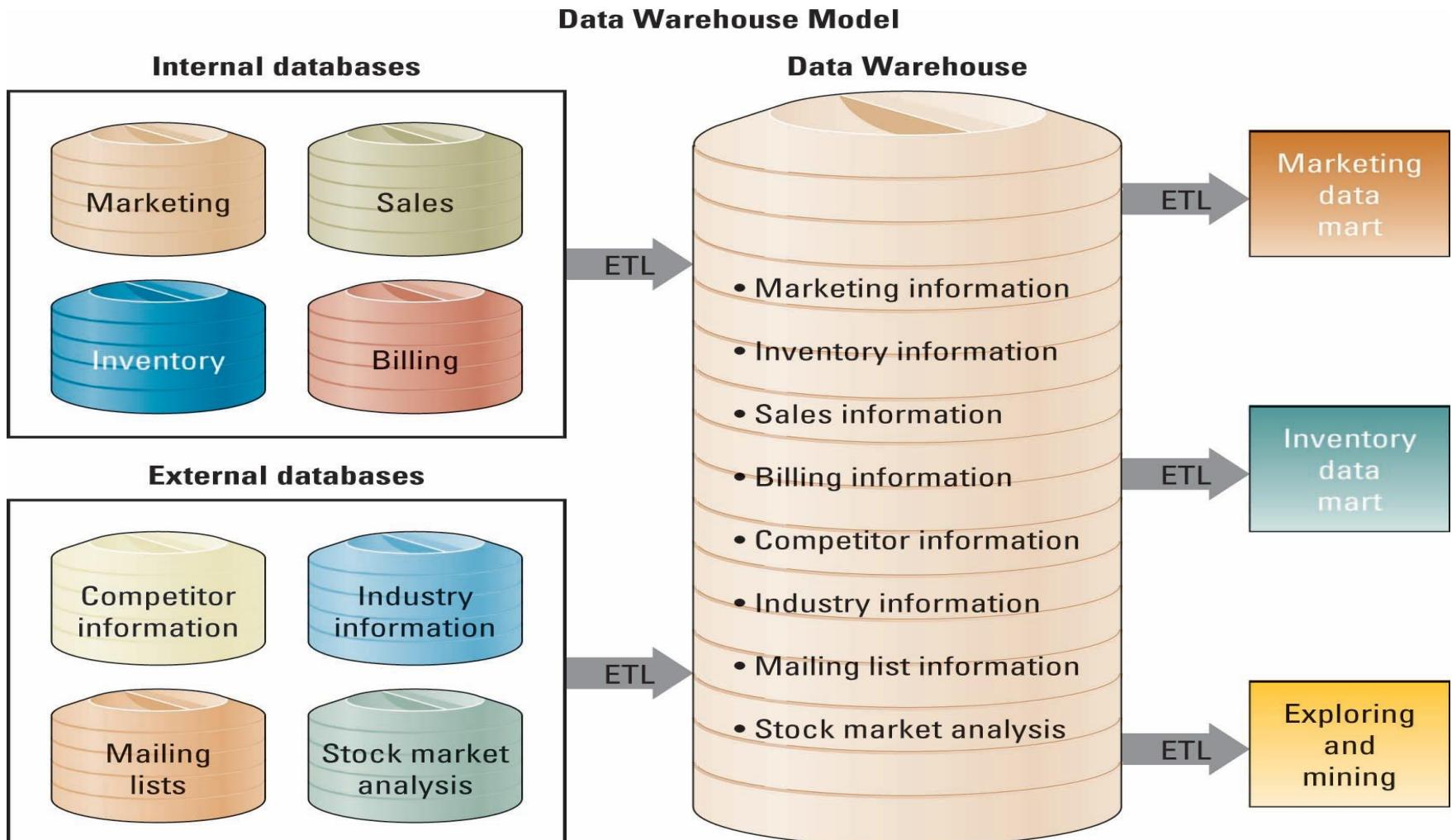
Q9-3: How Do Organizations Use Data Warehouses and Data Marts to Acquire Data (for analysis)?



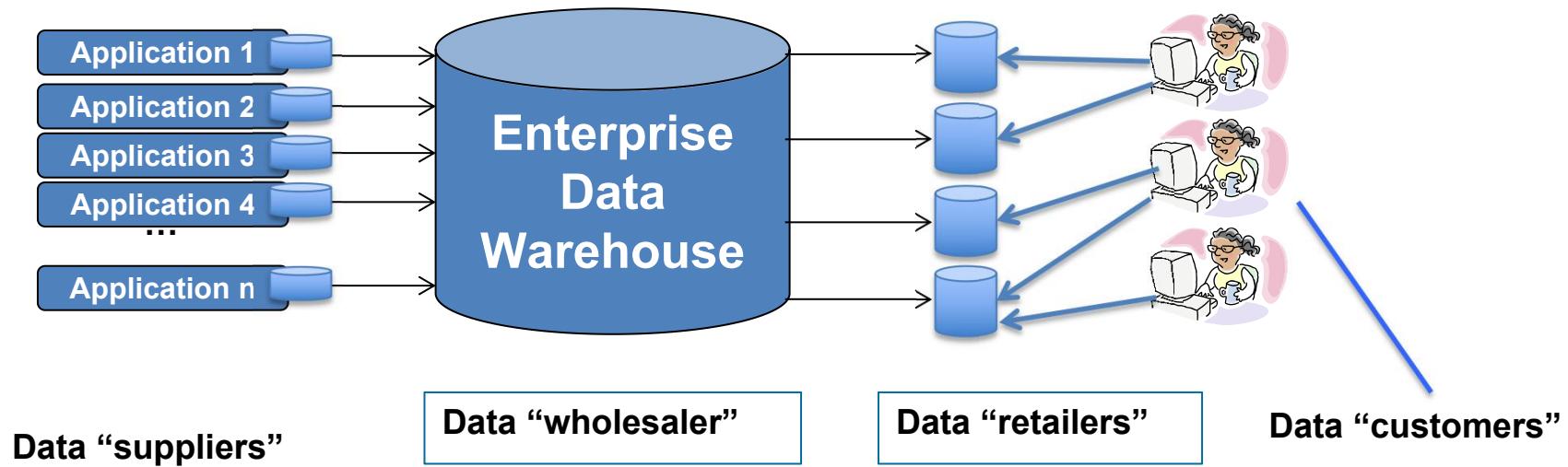
Extract, Transform, Load (ETL)



Data Warehouse vs Data Mart



The “wholesaler-retailer” analogy

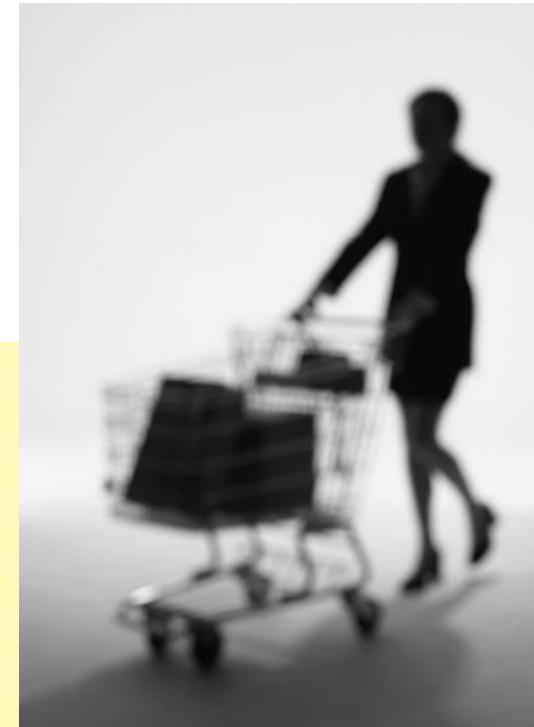
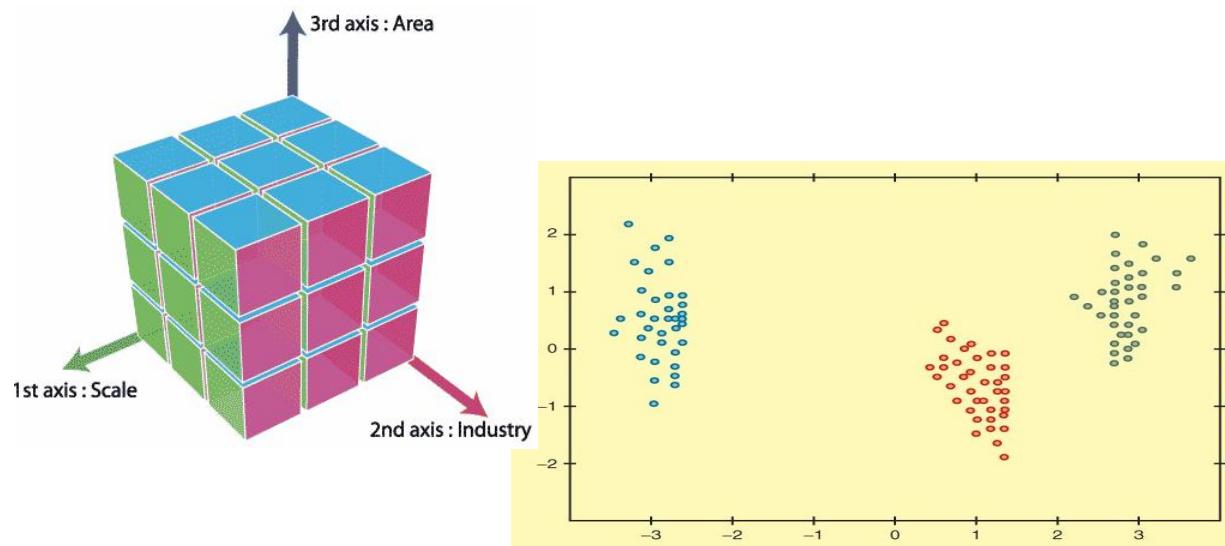


DW vs. Data Marts

Data Warehouse	Data Marts
Holds multiple subject areas	Often holds only one subject area
Hold very detailed information	May hold more summarized data
Works to integrate all data sources	Concentrates on integrating information from a given subject area or set of source systems
Does not necessarily use a dimensional model but feeds dimensional model	Is built focused on a dimensional model using a star schema
Implement time is relatively long (Months, Years)	Implement time is moderate (Months)

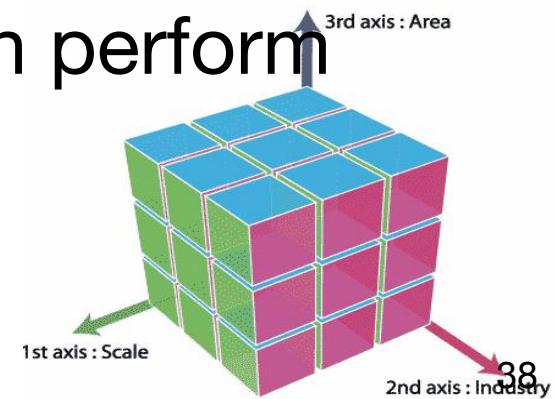
QX4: What are some common BI techniques?

1. Multidimensional Analysis
2. Cluster Analysis
3. Association Detection



Multidimensional Analysis

- BI tools help creating multidimensional view of data
 - Dimension is an attribute of data.
 - Cube is a common term for the representation of multidimensional information.
- Online analytical processing (OLAP) is a reporting technology that can perform multidimensional analysis



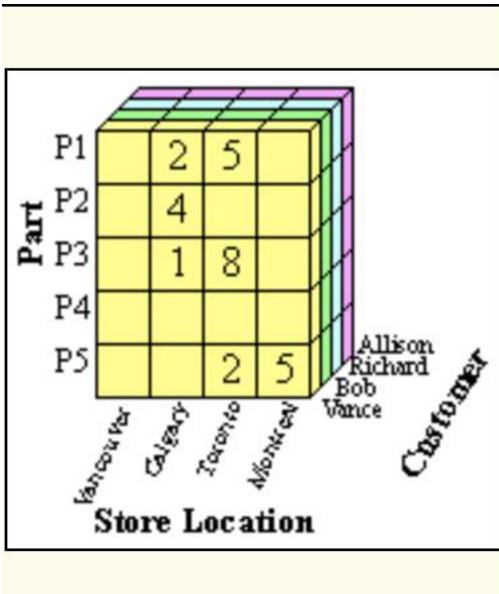


Figure 1(a): Front View of Sample Data Cube

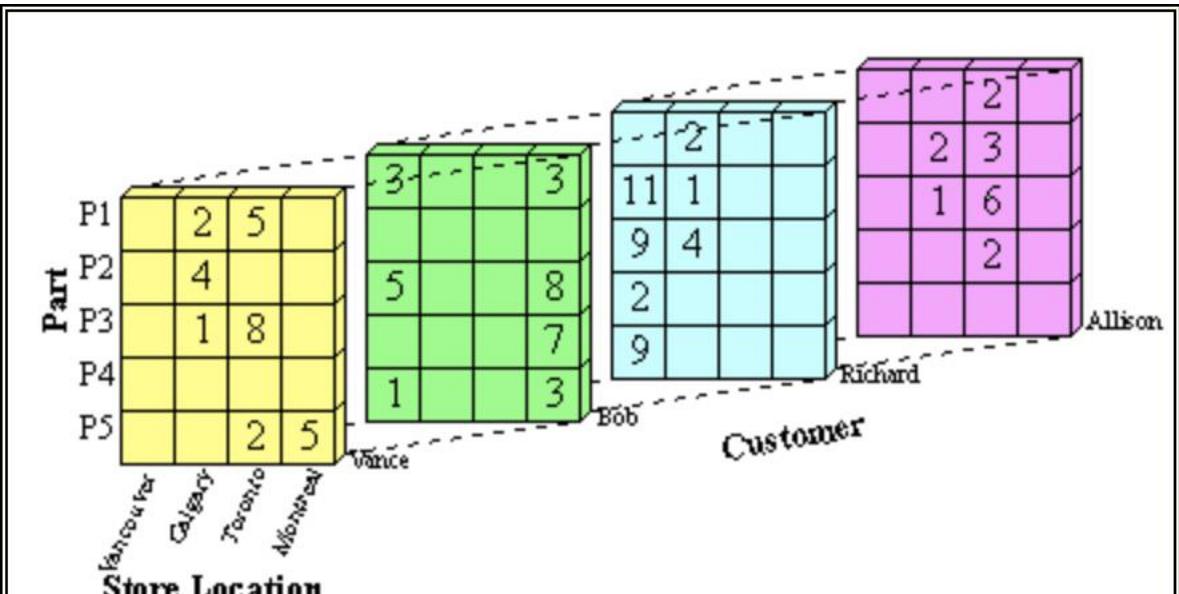
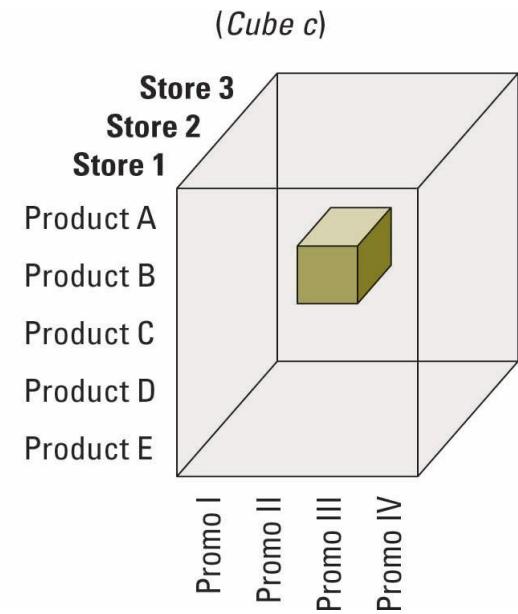
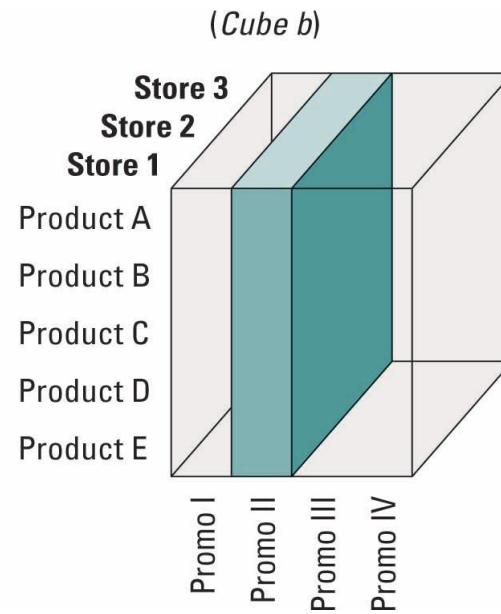


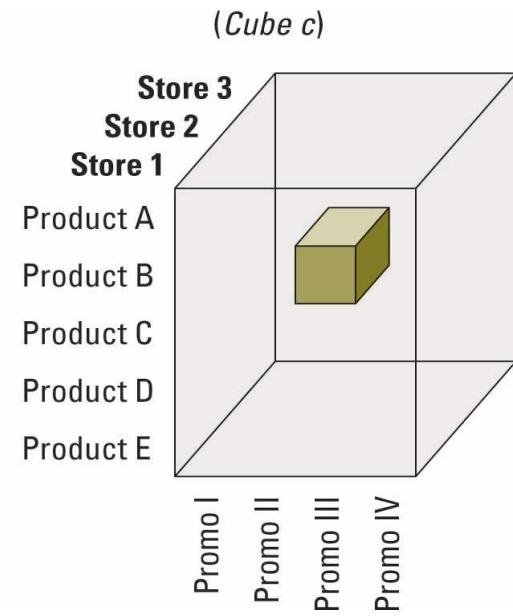
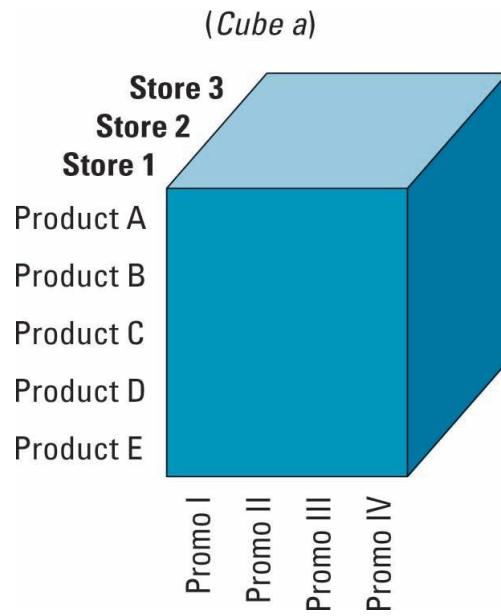
Figure 1(b): Entire View of Sample Data Cube

Cubes of Information



Dimensions: store x product x promotion
Value: sales
What questions can be asked from?

Cubes of Information



Dimensions: store x product x promotion

Value: sales

Question to be answered, e.g. what is the impact on sales of
promo II for all stores of product B

Operation: Slicing and dicing

Q&A time:

Suppose you are a management trainee at a bank, you are now given the following data dimensions. Please construct a cube using any 3 dimensions from the following list.

Banking Products, Branch, Promotion Scheme, Sales, Customer Profile, Complaints

* all dimensions have “offline” version and “online” version except the Branch dimension

Describe 1 potential decision you can make based on the cube you proposed.



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Smart e-Services (**ISSN**)

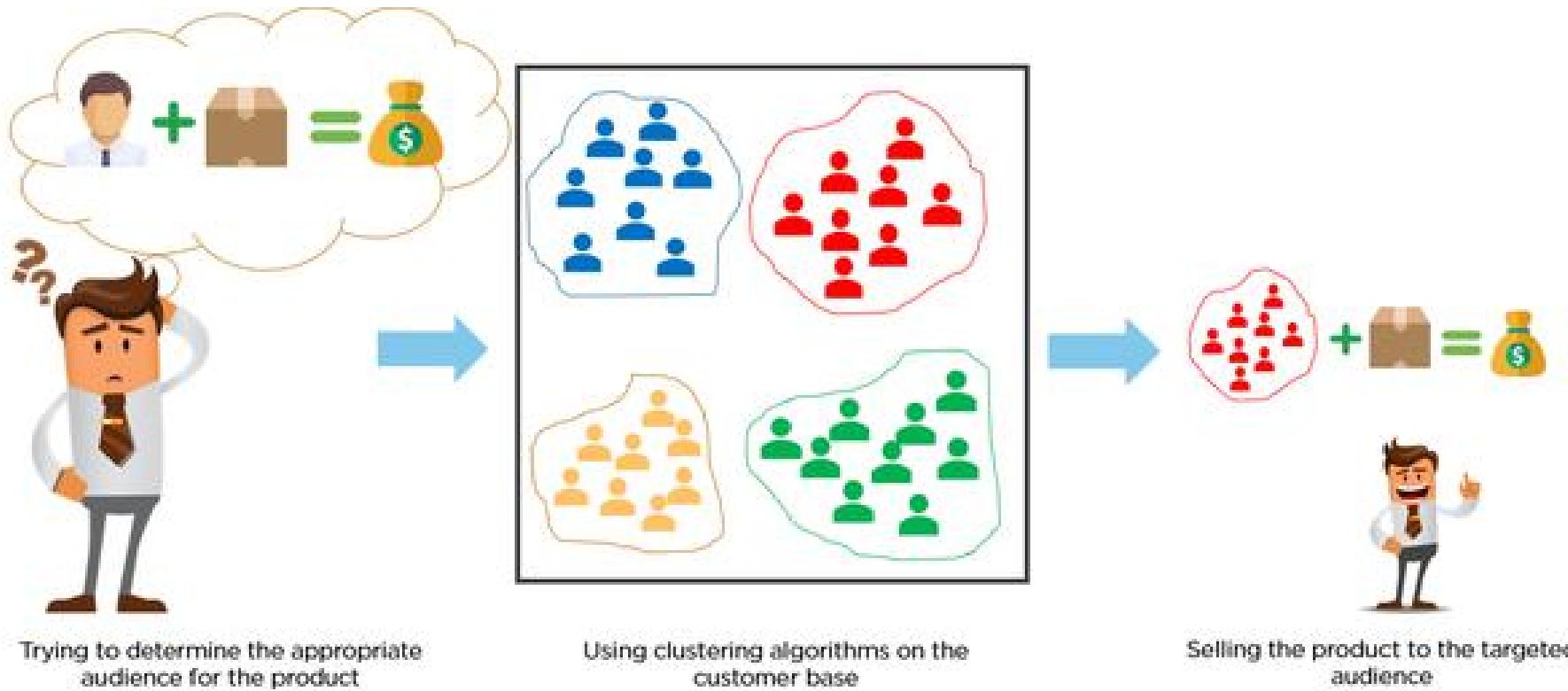
Smart IS Auditing (**ISA**)
Smart Global Business (**GBSM**)

Cluster Analysis

- A technique used to divide an information set into **(mostly) mutually exclusive groups** such that
 - Intra-cluster members are close to each other
 - Inter-cluster members are far away from each other

Analyze data's “proximity” to find out potential “groups / clusters”
→ e.g. market segmentation

Cluster Analysis



Analyze data's “proximity” to find out potential “groups / clusters”
→ e.g. market segmentation

Association Detection



Association Detection

- Reveals the **relationship between variables** along with the nature and frequency of the relationships.
- Determine likelihood of events occurring together at a particular time
 - 55% of the time, event A and B occurred together

Business Application of Association Detection

Frequently bought together



This item: AmazonBasics Wireless Computer Keyboard and Mouse Combo - Quiet and Compact - US Layout (QWERTY) **\$27.79**

AmazonBasics High-Speed 4K HDMI Cable - 6 Feet **\$6.99**

Acer SB220Q bi 21.5 inches Full HD (1920 x 1080) IPS Ultra-Thin Zero Frame Monitor (HDMI & VGA port) **\$89.99**

What other items do customers buy after viewing this item?

Arteck 2.4G Wireless Keyboard Stainless Steel Ultra Slim Full Size Keyboard with Numeric
★★★★★ 1,485
\$22.94 ✓prime

Logitech MK235 Wireless Keyboard and Mouse
★★★★★ 742
\$19.99 ✓prime

Logitech Wireless Combo MK360 – Includes Keyboard with 12 Programmable Keys and Wireless
★★★★★ 6,112
\$31.57 ✓prime

RATEL Wireless Keyboard Mouse Combo, 2.4GHz Slim Full-Sized Silent Wireless Keyboard and
★★★★★ 597
\$22.99 ✓prime

How Does the Knowledge in This Chapter Help You?

- Banking trends + BI techniques
- You can **extend BI to other industries** that you are interested in.
- Relevant professional qualification/exam/tools,
e.g.



A screenshot of the IBM Business intelligence page. The top navigation bar includes links for "Industries & solutions", "Services", "Products", "Support & downloads", and "My IBM". Below the navigation, a breadcrumb trail shows "IBM Software > Products > Business analytics > Business intelligence". The main heading is "Business intelligence". To the right is a photo of a woman in a business suit. A decorative graphic of overlapping colored squares is positioned between the heading and the photo. Below the heading are three buttons: "Learn", "Products", and "Downloads".



Why business intelligence from IBM?

Make better and smarter business decisions faster with solutions that take business intelligence (BI) to a whole new level. Innovations in BI from IBM provide broader analytic capabilities so that everyone has the relevant information they need to drive your business forward. IBM business intelligence products are designed to integrate with one another and with many third-party solutions, including leading big data platforms. So, you can start addressing your most pressing BI needs almost immediately with the confidence that you can seamlessly grow your solution over time to meet future requirements.

Not in United States?

Contact IBM

Email IBM

Request a quote

Or call us at: 866-601-1934
Priority code: 101KR29W

After obtaining insights from data, what should I do?

- How to lead projects in a systematic way?
- Professional qualifications available.



BI → identifying opportunities;
PM → managing projects to realize opportunities

- Business strategy
- Consultant
- Able to work with people from different locations and culture
- Communicate effectively
- Persuasively with senior leadership teams
- Business acumen
- Analytical thinking
- PMP certification
- ...
- Could you relate them with what you have learned in this course?

Project Manager, Business Process (US listed corp)

The Company

Our client is a US listed corporation and one of the market leaders in their industry with strong established operating platforms in North America and Europe and a growing presence in Asia Pacific and Latin America. Due to rapid business expansion and large scale projects getting underway, an exciting opportunity has arisen and high caliber are cordially invited to join them.

The Role

This role will be responsible for and/or providing necessary solution support for the coordination, implementation, execution, control and completion of various business and IT projects. You will be working closely with different business leaders to analyze business processes, identify areas of improvement and drive process and system change across the business groups, ensuring consistency with company strategy, commitments and goals.

Required Capabilities

You must have at least 5-8 years experience in project management and implementation, as well as experience in business strategic consultation or the role of internal consultant. You must be able to work with people from different locations and culture and able to communicate effectively and persuasively with senior leadership teams. You should also possess strong business acumen and analytical thinking and the desire to drive results. PMP certification is preferred. Fluency in English and Cantonese is essential.

Apply Now

Excellent career prospect and attractive remuneration package as well as fringe benefits will be offered to suitable candidates. To apply, please send your CV (in Word format) to cv@headsearch21.com

Please note that only short-listed candidates will be contacted. All personal data collected will be treated in strict confidence and solely for recruitment purpose.

Career Level

Senior

Yr(s) of Exp

5 years

QX5: Project Management Qualification

- Project Management Professional (PMP)
 - Industry-recognized certificate for project managers
 - 4-year degree + 3 or above years of project management experiences + exam
 - <https://www.pmi.org/certifications/types/project-management-pmp>
- Project Management Institute
 - <http://www.pmi.org/>



QX5: Project Management Qualification

- Domain knowledge
 - **INITIATING** the project
 - **PLANNING** the project
 - **EXECUTING** the project
 - **MONITORING** and **CONTROLLING** the project
 - **CLOSING** the project



[Source: PMP Exam Content Outline](#)

QX5: Project Management Qualification

- Initiating the project
 - Perform project assessment
 - Meeting with sponsors (**internal / external**)
 - Conduct risk (and benefit) analysis
 - Obtain project charter
 - ...

QX5: Project Management Qualification

- Planning the project
 - Assess and review detailed project requirements, constraints, assumptions
 - Define scope
 - Develop budget plan
 - Develop project schedule
 - Develop HR management plan

QX5: Project Management Qualification

- Executing the project
 - Acquiring resources outlined in the planning phase
 - Execute tasks defined **(by your company or others)**
 - Implement approved changes

QX5: Project Management Qualification

- Monitoring and controlling the project
(during execution)
 - Measure project performance
 - Ensure project deliverables conform to quality standards

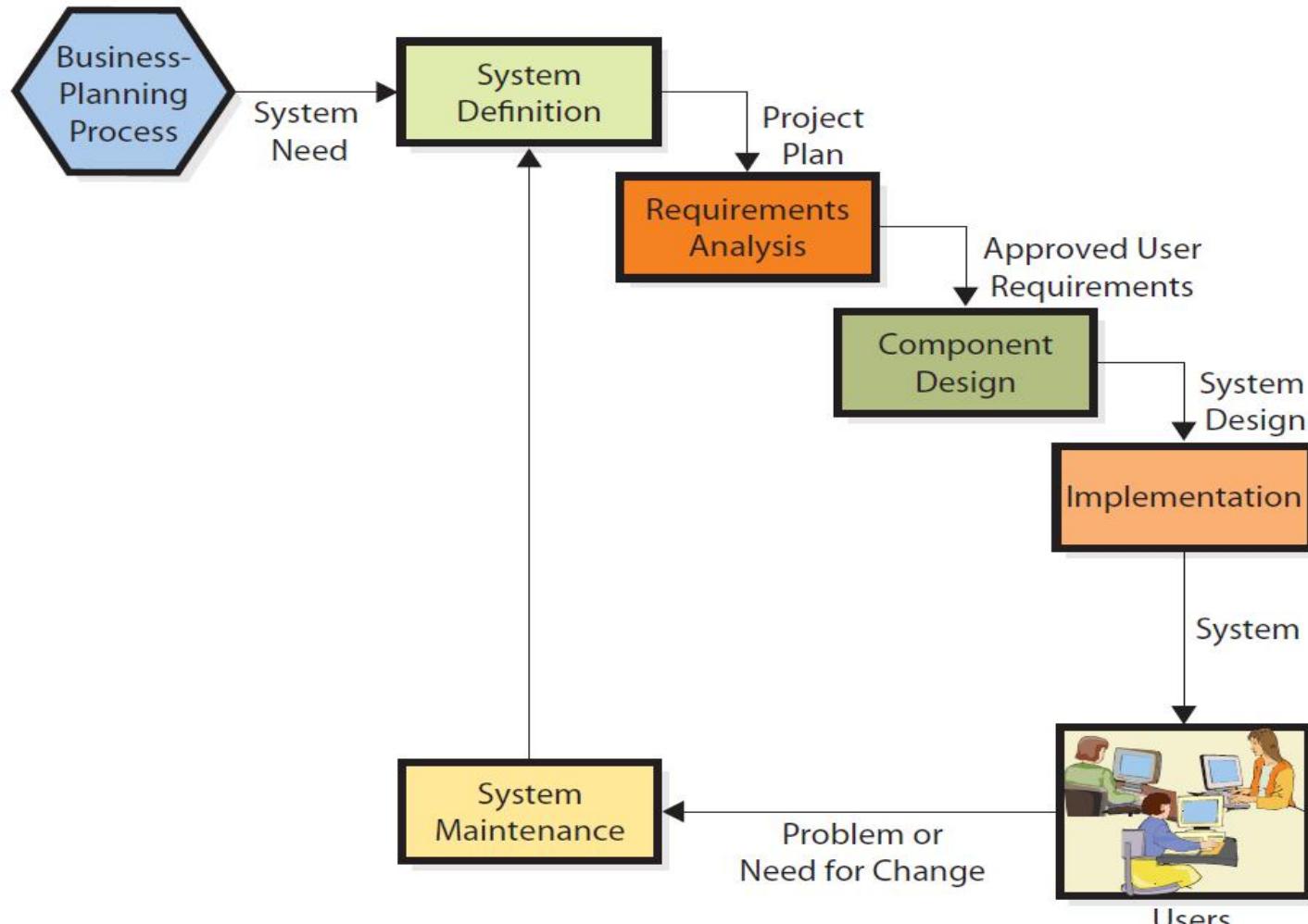
QX5: Project Management Qualification

- Closing the project
 - Obtain final acceptance
 - Transfer ownership
 - Obtain financial, legal, and admin closure

How about a project involving IS components?

- Let's see the standard process in managing a project involving technology.

Q12-3: What are the five phases of the SDLC?



QX6: What is Change Management?

- Changes, changes, changes; they're the real killers. (The Standish Group Chaos Report)



**CHANGE
MANAGEMENT**

The text "CHANGE MANAGEMENT" is displayed in large, bold, sans-serif letters. The word "CHANGE" is in yellow, and "MANAGEMENT" is in blue. Both words have black outlines and are set against a light gray background.

<https://www.youtube.com/watch?v=gmoDpj1jtyA>

QX6: What is Change Management?

- “...a vital component of IS development and implementation projects to increase the chances of success of a project...” (Ćirić & Raković, 2010)
- When managing change, special attention should be paid to
 - Resistance to change
 - Organizational culture
 - Project participants (or stakeholders)

QX6: What is Change Management?

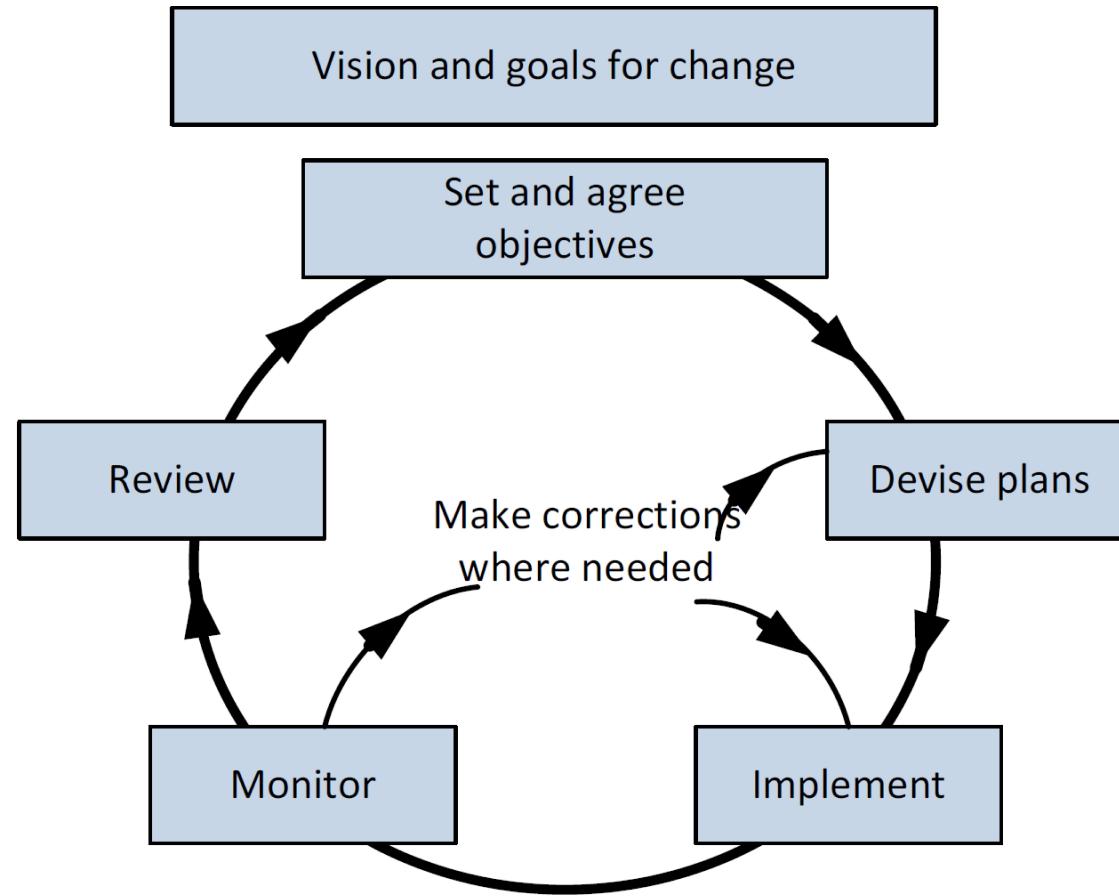


Figure 2 Monitoring change implementation (Partridge, 2007)

QX6: What is Change Management?

1. Setting and managing objectives so that they are linked to the vision and purpose of change
2. Planning the details and required resources
3. Implementing the plan with continuous monitoring
4. Possible adjustment of the plan or modification of actions to ensure achievement of objectives

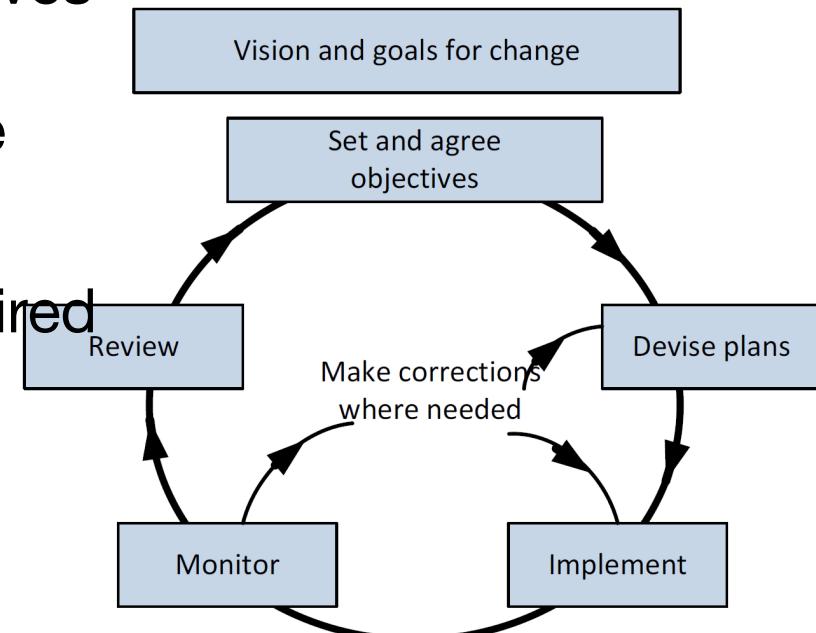
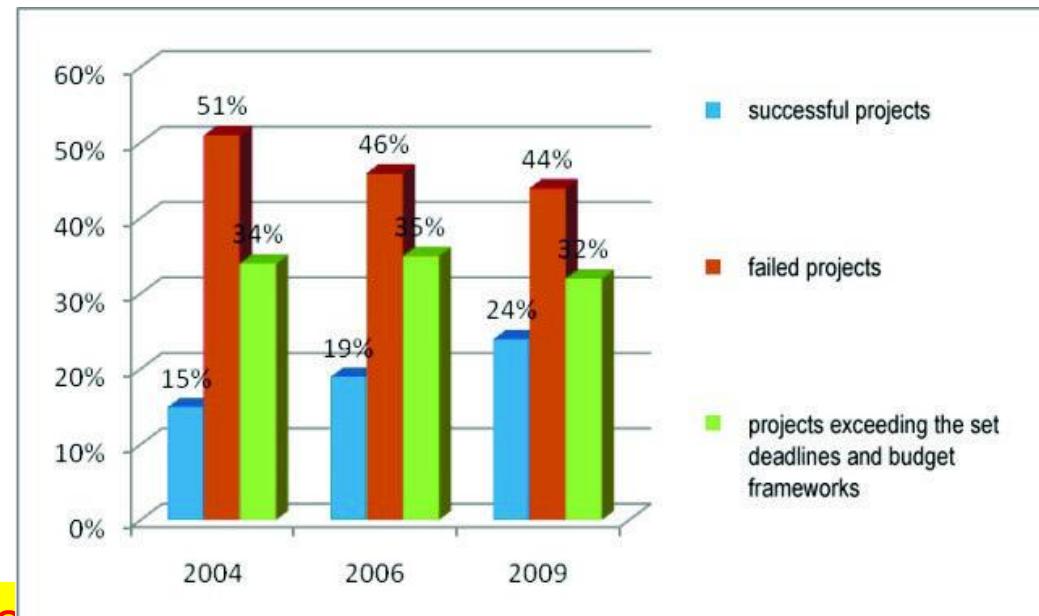


Figure 2 Monitoring change implementation (Partridge, 2007)

Q12-2: Why is Systems Development Difficult and Risky?

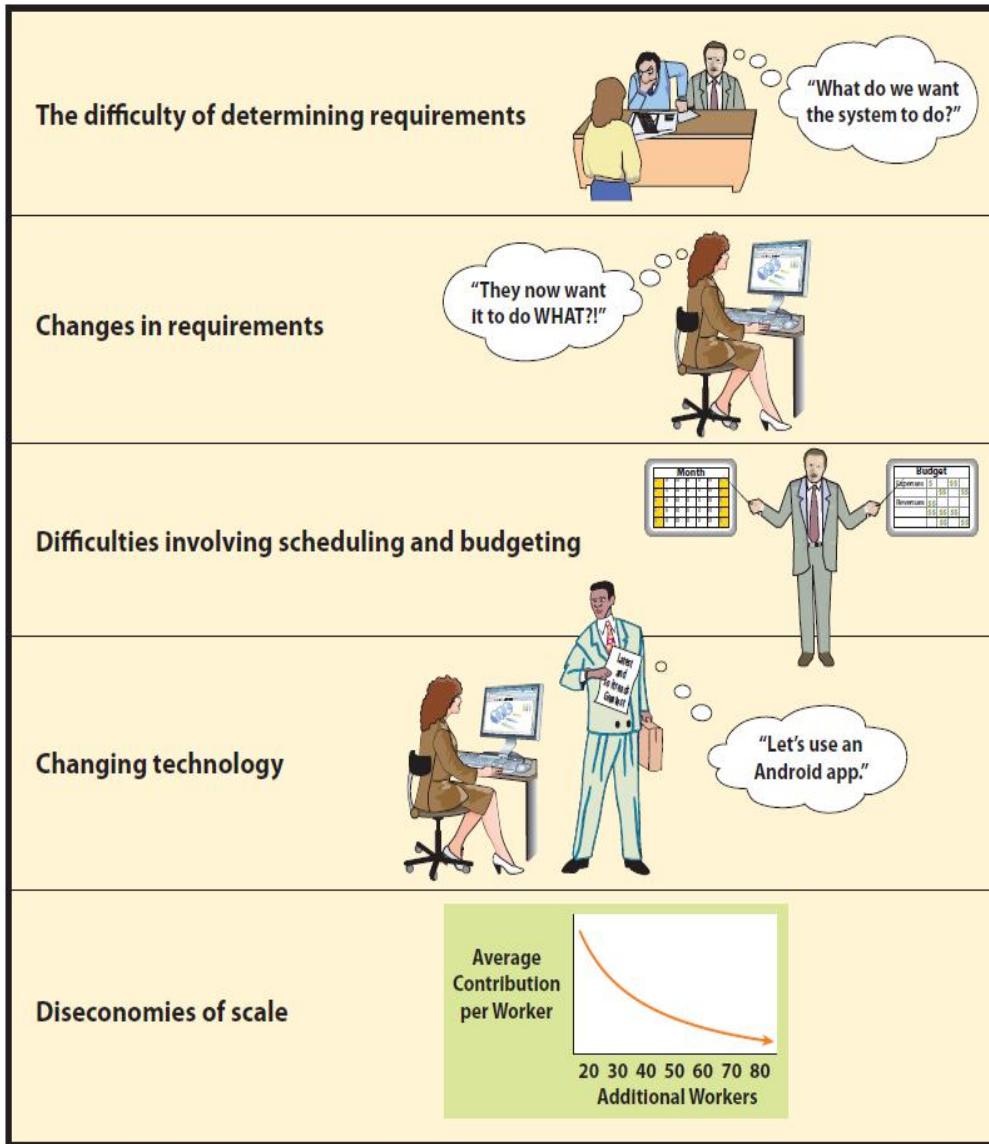
- Many projects are **never finished**.
 - Those that finish are often **200-300% over budget**.
 - Some projects finish within budget and schedule, but **don't accomplish goals**.



Project managers' key tasks...

make sure the project could be completed under the resource constraint (time, \$, manpower, etc) in achieving goals.

Major Challenges to System Development



1. Difficulty of Requirements Determination

- What specifically does system do? How?

Business analysts / project managers use diagrams to illustrate key features of new systems, supplemented with detailed specifications.

2. Changing Requirements

- Moving targets



Business analysts / project managers determine what changes could be handled within resources constraints.

3. Scheduling and Budgeting Difficulties



Business analysts / project managers calculate all these and report the ROI to management.

4. Changing Technology

- Do you want to stop your development to switch to the new technology?



Business analysts / project managers carries out the impact analysis and determines if the new tech should be incorporated.⁶⁹

5. Diseconomies of Scale



Business analysts / project managers plans carefully for team sizes and timeline.

Why is this lecture valuable to you?

- This lecture shows Smart Banking, Smart e-Payment, Big Data, BI, and Project Management
- The knowledge is important for your career as a business consultant, banker, financial analyst, data scientist, and project manager, to deal with data
- BI is a tool for innovative discovery!

IS knowledge and skills enable you to be a competent project manager / business analyst.

Weeks 5 and 6 Recap

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QX3: How would BI help in Smart Banking?

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QX5: Project management qualification?

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Q12-2: Why is systems development difficult and risky?

References and Disclaimer

- Ch. 9, Ch. 12
- Business Driven Technology, 3rd Edition, Ch. 6
- <http://www.pmi.org/>
- Ćirić, Z., & Raković, L. (2010). Change Management in information system development and implementation projects. *Management Information System*, 5(1), 23-28.
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