

- not required by law
1. Brainstorm a list of discretionary information that might be an output of an accounting information system and be needed by Starbucks. Prioritize which items might be most important, and provide support. *cost of getting info ↔ benefit of obtaining info.*

Answers will vary. Here are some potential answers:

The cost of a cup of coffee, by type: Breakfast blend, Cafe estima, caffe Verona, espresso roast, Ethiopia sidamo, french roast, Gold coast blend, Guatemala Antigua, house blend, Italian roast, Kenya coffee, komodo dragon blend, organic Serena blend, organic shade grown Mexico, sumatra, decaf caffe Verona, decaf espresso roast, decaf house blend, and decaf Sumatra!

Monthly Sales per square foot of retail space.

Employee cost for each operating hour.

Advertising expenditures per dollar of sales.

The cost of condiments per dollar sales of coffee. Condiments might include sweeteners, liquid creamers, cream canisters, sugar packets, sugar canisters, stir sticks!

The cost of electricity per operating hour each month of the year.

2. Explain the information value chain. How do business events turn into data, then into information, and then into knowledge? Give an example starting with the business event of the purchase of a DVD at Best Buy all the way to useful information for the CEO and other decision makers.

Answer:

The information value chain represents the overall transformation from a business need and business event (like each individual sale of U.S. flag) to an ultimate decision. The information value chain might be represented considering the purchase of a DVD at Best Buy in the following way:

- The DVD will be recorded as sales revenue and then after deducting its costs will add to or subtract from corporate income. The cash from the DVD sale will also add to the operating cash flows.
- The specific DVD will be recorded in the information as a sale to monitor which DVDs are selling within Best Buy. This will help Best Buy and its suppliers know which DVDs are selling and which type of DVDs should be reordered. The type of DVD will also help the marketing department better understand its customers and their respective demographic profile to better market to them.

In addition, knowing the location of the DVD sale will also help decision makers know where its sales are occurring.

- The CEO can look at the profitability of DVDs overall, the specific types of DVDs that are selling and the location of those sales all due to the information value chain

1. The sales of each DVD alone in Best Buy is the data

2. Checking on which DVD has the most number of sales or what type of DVD it was, is the information

3. managers will analyze the type of DVDs that are being sold the most and will get DVDs with the same type from the suppliers, and which are the ones that are not sold → make decision based on knowledge gathered from info. on what to sell, and what to stop selling.

3. Give three examples of types of discretionary information at your college or university, and explain how the benefits of receiving that information outweigh the costs.

Answers will vary. This represents a potential answer.

- Universities are often interested in their freshmen retention (the percentage of sophomores that return after their freshman year). *whether they stay or quit*
- Universities also quite interested in their four- or five-year graduation rates.
- Universities are also interested in their production of research grants. This is often used to monitor the success of their research and their ability to get interested sponsors (such as the National Institute of Health or the National Science Foundation).
universities are interested to know whether their students after graduation are getting jobs due to the programs that the university offers or not.

Information for each of these three examples can be gained by the information system at the university. However, a university generic information system does not usually offer this information as a standard report or standard output of the system. Therefore, work must be done to capture (and potentially digitize) this information, ensure its validity and then report it in an appropriate useful format. The cost of getting useful information will depend on the university and its technology. However, since these represent three keys metrics of a university and will likely be used as a key input to manage the university, the benefits will potentially outweigh those costs.

4. After an NBA basketball game, a box score is produced detailing the number of points scored, assists made, and rebounds retrieved (among other statistics). Using the characteristics of useful information discussed at the beginning of the chapter, please explain how this box score meets (or does not meet) the characteristics of useful information.
5. List and explain three ways that an AIS can add value to the firm.

Answer:

Accounting Information Systems add value by providing decision relevant information to management.

Three specific examples would include the following:

1. Customer relationship management (CRM) techniques could attract new customers, generating additional sales revenue.
2. Enterprise systems can significantly lower the cost of support processes included.
3. Supply Chain Management Software allows firms to carry the right inventory and have it in the right place at the right time.

Problems:

4. Match the value chain activity in the left column with the scenario in the right column.

- | | |
|---------------------------------------|-----------------------------------|
| 1. Customer call center | A. Operations |
| 2. Supply schedules | B. Inbound logistics |
| 3. Order taking | C. Procurement |
| 4. Accounting department | D. Firm infrastructure |
| 5. Staff training | E. Human resource management |
| 6. Research and development | F. Technology |
| 7. Verifying quality of raw materials | G. Service activities |
| 8. Distribution center | H. Outbound logistics |
| 9. Manufacturing | I. Marketing and sales activities |

Answer:

- | | |
|---|--|
| 1. Customer Call Center matches best with | G. <u>Service</u> Activities |
| 2. Supply Schedules matches best with | B. Inbound Logistics <i>input from suppliers</i> |
| 3. Order Taking matches best with | I. Marketing and <u>sales activities</u> |
| 4. Accounting <u>Department</u> matches best with | D. Firm <u>Infrastructure</u> |
| 5. Staff Training matches best with | E. Human Resource Management |
| 6. Research and Development matches best with | F. Technology |
| 7. Verifying quality of raw materials matches best with | C. Procurement <i>buying raw materials</i> |
| 8. Distribution Center matches best with | H. Outbound Logistics <i>output to customers</i> |
| 9. Manufacturing matches best with | A. Operations |

9. Information systems have impact on financial results. Using **Figure 1-8** as a guide, which system is most likely to impact the following line items on an income statement. The systems to consider are enterprise systems, supply chain systems, and customer relationship management systems.

Income Statement Item	System
Revenues	CRS

Cost of goods sold	supply chain S
Sales, general, and administrative expenses	enterprise S
Interest expense	supply chain S
Net Income	CRM supply chain system enterprise system

Answer:

Income Statement Item	System
Revenues	Customer relationship management system
Cost of Goods Sold	Supply chain system
Sales, General and Administrative Expenses	Enterprise system
Interest Expense	Supply chain system
Net Income	All of these

CRM

10. Accountants have four potential roles in accounting information systems: user, manager, designer, and evaluator. Match the specific accounting role to the activity performed.

1. Controller meeting with the systems analyst to ensure accounting information system is able to accurately capture information to meet regulatory requirements
2. Cost accountant gathering data for factory overhead allocations from the accounting information system
3. IT auditor testing the system to assess the internal controls of the accounting information system
4. CFO plans staffing to effectively direct and lead accounting information system

Answer:

The designer meeting with accountant to see whether requirements are covered

1. Controller meeting with the systems analyst to ensure accounting information system is able to accurately capture information to meet regulatory requirements -- **Designer**
2. Cost accountant gathering data for factory overhead allocations from the accounting information system -- **User**
3. IT auditor testing the system to assess the internal controls of the accounting information system -- **Evaluator**
4. CFO plans staffing to effectively direct and lead accounting information system -- **Manager**

Discussion Questions & Problems

1. How has the Sarbanes-Oxley Act affected the audit profession and corporate governance of public firms?

Answer: responsibility of the auditors to assess annually on the effectiveness of internal control

SOX requires public companies registered with the SEC and their auditors to annually assess and report on the design and effectiveness of internal control over financial reporting. SOX also established the Public Company Accounting Oversight Board (PCAOB) to provide independent oversight of public accounting firms.

↳ unbiased, objective

2. What are the objectives and components of the COSO ERM framework?

Answer:

Objectives: (4)

- ① **Strategic** – high-level goals, aligned with and supporting the firm's mission and vision
- ② **Operations** – effectiveness and efficiency of operations
- ③ **Reporting** – reliability of internal and external reporting
- ④ **Compliance** – compliance with applicable laws and regulations

Components: (8)

Internal Environment, Objective Setting, Event Identification, Risk Assessment, Risk Response, Control Activities, Information and Communication, Monitoring

3. COSO developed two frameworks: the COSO 2013 internal control framework and the COSO ERM framework. Why did COSO develop the ERM framework? What are the differences between the two frameworks?

Answer:

COSO developed the ERM framework to help firms manage risk and opportunity. All firms encounter uncertainty in daily operations. Uncertainty presents both risk and opportunity, with the potential to reduce or enhance the firm's value. ERM identifies potential events that may affect the firm. ERM manages risk to be within the firm's risk appetite. ERM provides reasonable assurance regarding the achievement of the firm's objectives.

Difference: Internal control is an integral part of enterprise risk management. COSO 2013 Internal Control framework is the basis for existing rules, regulations, and laws. It has been incorporated into this ERM framework. In addition to internal controls, COSO ERM expands the COSO Internal Control framework to provide a broader view on risk management to maximize firm value

4. Use a few sentences to describe IT general controls and application controls. Give a few examples of these two types of controls.

Answer:

IT general controls (ITGC) relate to enterprise-level controls over IT. Most general controls limit access to the IT systems and prevent unauthorized use.

Examples: Passwords, Anti-virus software, Disaster Recovery Planning, change management process.

* IT control environment
* access controls etc.
* change management controls

IT application controls are activities specific to a subsystem's or an application's input, processing, and output.

Examples: Closed-loop Verification, Validity Check, Batch Totals

5. Why would a manager be inclined to use the COBIT framework as a guide for IT governance and management?

Answer:

COBIT provides a supporting tool set that bridges the gap among IT control requirements, technical issues, and business risks. The COBIT framework:

- provides a business focus to align business and IT objectives;
- defines the scope and ownership of IT process and control;
- is consistent with accepted IT good practices and standards;
- provides a common language with a set of terms and definitions that are generally understandable by all stakeholders; and
- meets regulatory requirements by being consistent with generally accepted corporate governance standards (e.g., COSO) and IT controls expected by regulators and auditors.

6. The ISO 27000 series serve different purposes than ITIL. Which one could be more important to accounting professionals and why?

Answer:

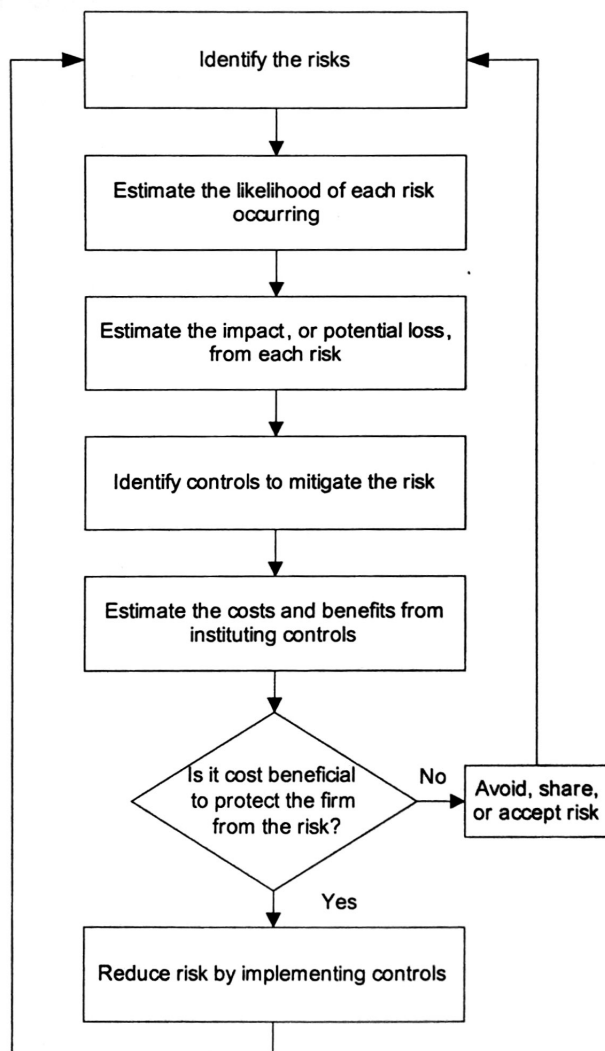
7. Segregation of duties is an important internal control. What functions must be separated? If ideal segregation of duties is not economically feasible, what are some compensating controls that would help reduce the risk of fraud or error?

Answer:

The general guideline for segregation of duties (SOD) is that transaction authorization, record keeping and asset custody should be separated from each other. If ideal segregation of duties is not economically feasible, supervision can be used to mitigate the risk posed by imperfect segregation of duties. The supervising individual might be a superior within the organization, or in the case of a small business the owner of the firm.

8. Use a flowchart to explain the risk assessment process.

Answer:



9. There are three types of controls: preventive, detective, and corrective. List some examples of each type. Explain which type of control auditors would focus on while evaluating a company's effectiveness of controls and why.

Answer:

Preventive controls are designed to deter problems before they arise. Preventive controls require compliance with preferred procedures and thus stop undesirable events from happening. Examples: closed-loop verification, validity check. **Detective controls** find problems when they arise. These controls are procedures and techniques designed to identify undesirable events after they have already occurred. Examples: bank reconciliations, monthly trial balances.

Corrective controls fix problems that have already occurred and been identified; These can include activities such as using backup files to recover corrupted data.

Detective controls are often linked to accompanying corrective controls to remediate any issues that are discovered. Examples: Disaster Recovery Planning, periodic backups

10. Describe the control activities in the COSO framework. Why are these control activities important for most firms

Answer:

Control activities are the policies and procedures that help ensure that necessary actions are taken to address risks to achieving the firm's objectives. There are two categories of control activities: physical controls and IT controls. Physical controls are mainly manual but could involve the physical use of computing technology. IT controls involve processes that provide assurance for information and help to mitigate risks associated with the use of technology.

A firm must establish control policies, procedures, and practices that ensure the firm's objectives are achieved and risk mitigation strategies are carried out. Control activities occur throughout a firm at all levels and in all functions.

Problems

7. The COSO 2013 internal control framework codifies 17 relevant principles associated with the five components of internal control. Match the following principles with the five components.

COSO Principles	COSO Components	Key words
a. Management establishes, with board oversight, structures, reporting lines, and appropriate authorities and responsibilities in the pursuit of <u>objectives</u> .	i. Control environment	objective
b. The organization deploys <u>control activities</u> through policies that establish what is expected and procedures that put policies into place.	ii. Risk assessment	assessing risk
c. The organization considers the potential for fraud in <u>assessing risks</u> to the achievement of objectives.	iii. Control activities	control activities
d. The organization holds individuals accountable for their internal control responsibilities in the pursuit of <u>objectives</u> . <i>control environment</i>	iv. Information and communication	information
e. The organization obtains or generates and uses relevant, quality <u>information</u> to support the functioning of internal control.	v. Monitoring activities	evaluate
f. The organization <u>evaluates</u> and communicates internal control deficiencies in a timely manner to those parties responsible for taking corrective action, including senior management and the board of directors, as appropriate.		

Answer:

a.	i
b.	iii
c.	ii
d.	i

e.	iv
f.	v

Authorization
 ↑
 bank reconciliation & trial balances
 ↗

1. Identify each of the following internal controls as a primarily preventive, detective, or corrective control.
- Backup ←
- Limit access to petty cash funds.
 - Reconcile the petty cash fund before replenishing it.
 - Require two signatures on checks above a specified limit.
 - Enable hidden flags or audit trails on accounting software.
 - Examine credit card statements and corresponding receipts each month, independently, to determine whether charges are appropriate.
 - Keep checks in a locked box or drawer and restrict the number of employees who have access to the key.
 - Back up accounting records daily.

Answer:

Internal Controls	Type of control
a. <u>Limit access</u> to petty cash funds.	Preventive control
b. <u>Reconcile</u> the petty cash fund before replenishing it.	Detective control
c. <u>Require two signatures</u> on checks above a specified limit.	Preventive control
d. Enable <u>hidden</u> flags or audit trails on accounting software.	Detective control
e. <u>Examine</u> credit card statements and corresponding receipts each month, independently, to determine whether charges are appropriate.	Detective control
f. Keep checks in a locked box or drawer and <u>restrict the</u> number of employees who have <u>access</u> to the key.	Preventive control
g. <u>Backup</u> accounting records daily.	Corrective control

2. Match the following internal controls with the categories of control activities.

Internal Controls
a. <u>Separate</u> handling cash (receipt and deposit) functions

Control Activities
i. Authorization

↙
 segregation of duties

from record keeping functions (recording transactions in the accounts receivable subsidiary ledger).
b. Require purchases, payroll, and cash disbursements to be <u>authorized</u> by a designated person. <i>authorization</i>
c. Require accounting department employees to <u>take vacations</u> . <i>independent verification</i>
d. <u>Separate</u> purchasing functions from payables functions. <i>segregation of duties</i>
e. Ensure that <u>the same person isn't authorized</u> to write and sign a check. <i>segregation of duties</i>
f. When opening mail, endorse or stamp checks "For Deposit Only." <i>access control</i>
g. Periodically reconcile the incoming check log against deposits. <i>independent verification</i>
h. Require supervisors to <u>approve</u> employees' time sheets before payroll is prepared. <i>authorization</i>
i. List <u>customer checks on a log</u> before turning them over to the person responsible for depositing <u>receipts</u> . <i>acc. documents & records</i>

ii. Segregation of duties
iii. Supervision
iv. Accounting documents and records
v. Access control
vi. Independent verification

Answer:

a.	ii
b.	i
c.	vi
d.	ii
e.	ii
f.	v
g.	vi
h.	i
i.	iv

Discussion Questions

1. Do you think that your accounting education has prepared you for all roles of an accountant in business (see [Table 2.1](#))? Which roles do you feel best prepared for? Which roles do you feel least prepared for? Why?

The answers will vary according to the student's background, but it is likely that they will feel best prepared to use technology and less prepared to design, manage, and evaluate technology

Table 2.1 : Roles of Accountants in Business

Stewardship and Reporting	Accounting/Finance Operations	Business Management Support
Regulatory compliance	Finance and accounting processes	Management information
Tax returns	Financial close	Planning budgeting and forecasting
Stakeholder assurance	Financial reporting and analysis	Performance measurement
Investor relations	Providing management information	Performance management
Raising capital and loans	People management	Risk management – from strategic to operational including fraud risk
Board reports	Using IT to make finance and accounting processes more efficient and effective	Investment appraisal
Statutory reporting		Cost management
		Supply chain management

2. Choose one of the Accounting/Finance Operations roles in [Table 2.1](#). How could a BPMN activity model help an accountant better understand that role?

Answer:

Managing regulatory compliance would involve collection and maintenance of a wide variety of information. First, organizations would have to collect requirement information. Then, they would have collect process information to identify where process activities must comply with regulations. Finally, they would have ongoing collection of process performance data to ensure continued compliance and reporting

3. Compare BPMN activity diagrams with flowcharts and DFDs. What is different? What is the same? When would one notation be better or worse than another?

Answer:

BPMN activity diagrams support process documentation, process evaluation, and process improvement. Thus, BPMN diagrams would document the finance and accounting processes to

support employee training. An accurate documentation would support an evaluation of process inefficiencies and potential process improvements including applications of technology, as well as a review of internal controls over the process and identification of potential weaknesses.

4. Consider the Stewardship and Reporting role of accountants shown in **Table 2.1**. What information would you need to collect and use to manage the regulatory compliance function?

Answer:

Student responses will vary depending on their experience, but most will mention training, SOX compliance, regulatory compliance, identifying and collecting process performance information, aiding audits, and so on.

5. Assume that your company has BPMN diagrams of all their main processes. How could they use this information?

Answer:

Process modeling is iterative. The analyst will model the process and then confirm his/her model with process participants. The confirmation process would likely raise questions about completeness

6. Describe some situations that might lead you to conclude that a BPMN diagram is not complete.
7. Each activity/task can only be assigned to one pool or lane. Why is that an important rule?

Answer:

The use of pools and lanes help establish responsibility. It would be hard to enforce responsibility where multiple departments are involved. Additionally, the assignment process helps define tasks/activities at an appropriate level of detail that allows the models to be used for training, process change, performance management, etc

8. Describe situations where you would use exclusive, inclusive, and parallel gateways?





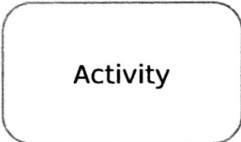
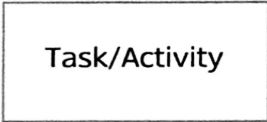



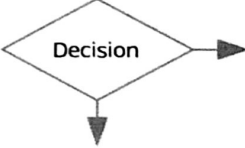
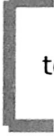
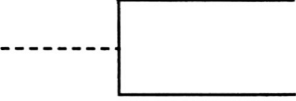
Answer:

Exclusive gateways show distinct choices, such as when you select one option among multiple alternatives. Inclusive gateways allow selection of one or more options, such as ordering both an entrée and an appetizer or just an entrée. Parallel gateways take all possible options, such as when dining at a restaurant that charges one price for the meal that includes an appetizer, main course, beverage, and dessert

9. Your process waits until you receive a response from your customer. What kind of flow object would you use to show this?
10. Give some examples of processes that would start with a timer event based on your experience
11. Compare BPMN diagrams to flowcharts and data flow diagrams

Answer:

BPMN diagrams serve similar purposes to flowcharts. The following table compares basic symbols and shows the similarities. The BPMN symbols have more capability to handle events and the Gateways are more flexible than the flowchart decision symbol. The extended list of symbols in the chapter shows that many flowchart symbols are closely tied to specific and outdated data processing methods, whereas the BPMN symbols are independent of the technology.

Element	BPMN Symbol	Flowchart Symbol
Events/ Start and End	 start  intermediate  end	
Activities		
Sequence Flows	 Sequence Flow	 Sequence Flow
Gateways/ Decisions	 Gateway	 Decision
Annotations	 text annotation	

Comparing BPMN to data flow diagrams shows that the models are very different. Data flow diagrams do not have start, end, or intermediate event symbols. They do, however, clearly show the flow of data in a process or processes, where the BPMN diagram more clearly shows the sequence of activities.