

Link 11.4 Answers to Exercise 11.1

1. Give two examples of top-down drivers for changes to an information system.
 - An organization's strategy, structure, systems, and people.
 - External legislative requirements, nationally, or internationally.
 - Requirements of the industry, market, suppliers, customers, and partners
2. What is meant by a bottom-up driver to changes to an information system?
 - Bottom-up drivers to changes an information system refer to changes to the underlying IT used to implement the information system, such as the IT devices used to capture or access information.
3. If Amy appoints a new employee with responsibility for her accounts, why might the information requirements of the finance system change?
 - Information requirements may change when there is a change of personnel because different people have different requirements for the quantity and quality attributes of information.
4. Is the introduction of an online ordering system an example of incremental or transformational change? Why?
 - The introduction of an online ordering system is an example of transformational. It is a new system which will change the way customers place orders and change the interaction between Amy and her customers.
5. What is the difference between a method and a methodology?
 - A method is a structured approach to achieve an activity.
 - A methodology is a framework of methods, tools and techniques which is based on a specific philosophy and approach.
6. Why is the traditional systems development life cycle referred to as the waterfall approach?
 - The traditional systems development life cycle adopts a sequential approach to systems development where the completed deliverables of one stage of the approach successively *fall* into the next stage of the approach to be used, like water in a waterfall.

7. List three criticisms of the waterfall approach to systems development.
 - There is a long delay between the start of the systems development and the final delivery of the system.
 - The needs of the organization are not met by the final system delivered.
 - The approach lacks the flexibility to address changes to the organization's requirements during the development process.
8. What is the difference between low-fidelity and high-fidelity prototypes?
 - Lo-Fi prototypes are cheap and quick to make.
 - Hi-Fi prototypes may have some limited functionality but make use of IT; they can be a closer representation of the finished system.
9. Why are prototypes useful in determining information requirements?
 - A prototype provides a physical representation of the final system that can be used to focus the discussion between business and IT staff about the information requirements. It is easier to see how the final information system may look and therefore easier to identify any omissions or limitations with the system design.
10. Why are methodologies needed to develop an information system?
 - Methodologies are needed to guide the development process, measure progress, specify deliverables and provide communication mechanisms in the design process.
11. Why is the process determining information requirements critical in developing an information system?
 - Determining information requirements is a critical process in information systems development as if the information requirements are not fully understood and implemented, the resulting system will not satisfy the information needs of the organization.
12. List at least six barriers which hinder the ability to determine the information requirements of an information system.
 - Lack of time available to fully explore requirements.
 - Key staff have limited time to participate in the development process.
 - Poor communication between the business and IT staff.
 - Lack of a common language between information systems developers and business staff.
 - Differences in use of terminology between business users.
 - Use of specialist terminology by both IT staff and business staff.

- Lack of a means to communicate requirements and check understanding of requirements. Both IT staff and business staff have a mental model of the system which they assume is the same.
- A lack of willingness with IT staff or business staff to establish a common basis for communication.
- Some business staff may be reluctant to participate in the development process.
- Difficulties in explaining detailed processes that are completed automatically by staff without thinking about them.
- Difficulty in recalling events and situations to be included in the system.
- Assuming that facts are obvious and do not need to be made explicit.
- Each business person only knows part of the system and the development team need to piece together incomplete and perhaps conflicting requirements.
- Lack of agreement about the scope of the information systems requirements.
- Range of different people with different ideas about what the system should do.
- Difficulty in identifying who to involve.
- Difficulty in future thinking of how the system may be used.
- Reluctance to change the existing systems and working practices.

13. Give an example of a functional requirement and nonfunctional requirement for Amy's ordering system.

- Functional requirements: select product, confirm order, and pay for order.
- Nonfunctional requirements: accessible via the Internet, accessible 24x7, uses Amy's corporate colour scheme, can be used with different web browsers, and can be used on mobile devices.

14. What are the benefits of observation as a means of determining information requirements?

- Through observation it is possible to find out how current processes really work (which may be different to how they are documented), to find out what artefacts are used and to find out the limitations of current systems.

15. Why are models important in information systems development?

- Models are important in information systems development as they provide a basis for discussion, communication and to share ideas. Models prompt questions to consider, identify highlight omissions and anomalies, and document concepts.

16. What is the relationship between event models and process models?

- The events that trigger changes to information in the information life cycle need to have processes defined in order to identify and respond to the event. These processes should be included in process models.

17. What is meant by a black box approach to analysing an information system?

- A black box approach involves examining the information system in terms of its external interface, its inputs, and outputs. It does not require analysis of the internal workings of the system.

18. How can a prototyping approach be used to determine information requirements?

- A prototype shows the interface through which the functionality of the information system can be accessed. It therefore shows the processes that the information system will need to support and the information required by the processes. The presentation of the information in the prototype can prompt discussion about any omissions and the way the information is organized.

19. From Figure 11.6, what seven business processes are needed to manage information relating to customer orders?

- Capture.
- Confirm.
- Modify.
- Fulfil.
- Cancel.
- Dispatch.
- Collect.

20. What information management issues need to be considered when making changes to an existing information system and why?

- When making changes to an existing information system it is necessary to consider whether the changes to the information system mean that the existing information that is input to the system is sufficient, and whether the existing information that is output from the system will change.
- This is necessary because when changes to an information system are proposed there is a risk that the changes may adversely affect other systems in the organization. It is the role of information management to ensure that the quality, security, and availability of the information resource meets the requirements of the entire organization.