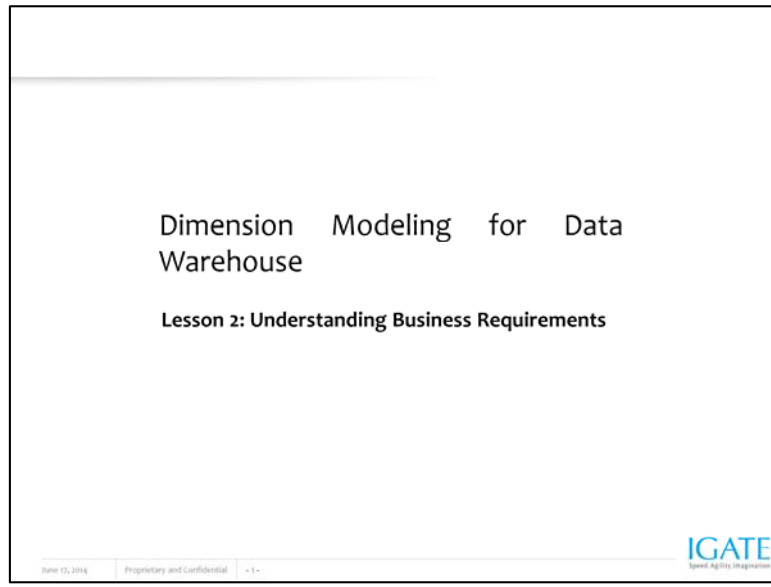
Dimension Modeling for Data Warehouse
Lesson 2: Understanding Business Requirements
June 17, 2014
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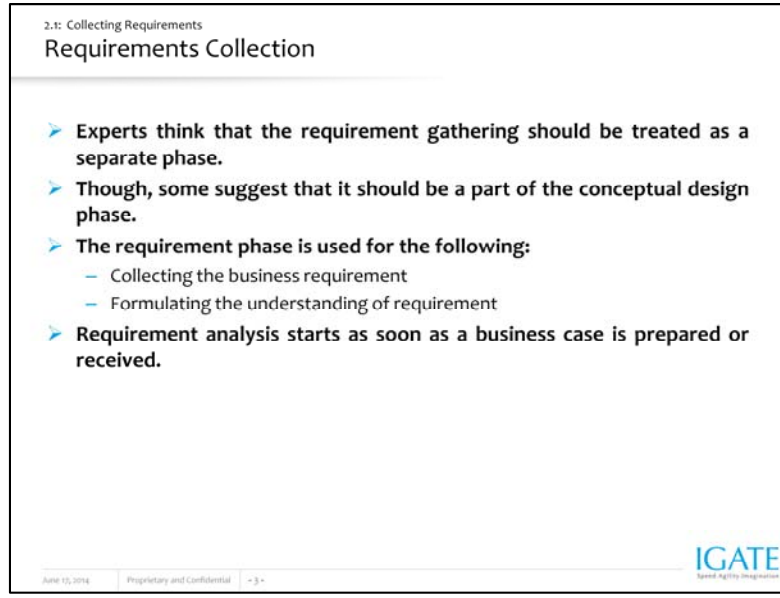
Lesson Objectives

- **This lesson will provide overview of various techniques of Requirement gathering**
- **We will learn about:**
  - Need of Requirement Analysis
  - The Data Life cycle
  - Ways of Collecting requirement
  - Business Requirement Specification (BRS)


2.1: Collecting Requirements
Requirements Collection
Experts think that the requirement gathering should be treated as a separate phase.
Though, some suggest that it should be a part of the conceptual design phase.
The requirement phase is used for the following:
Collecting the business requirement
Formulating the understanding of requirement
Requirement analysis starts as soon as a business case is prepared or received.
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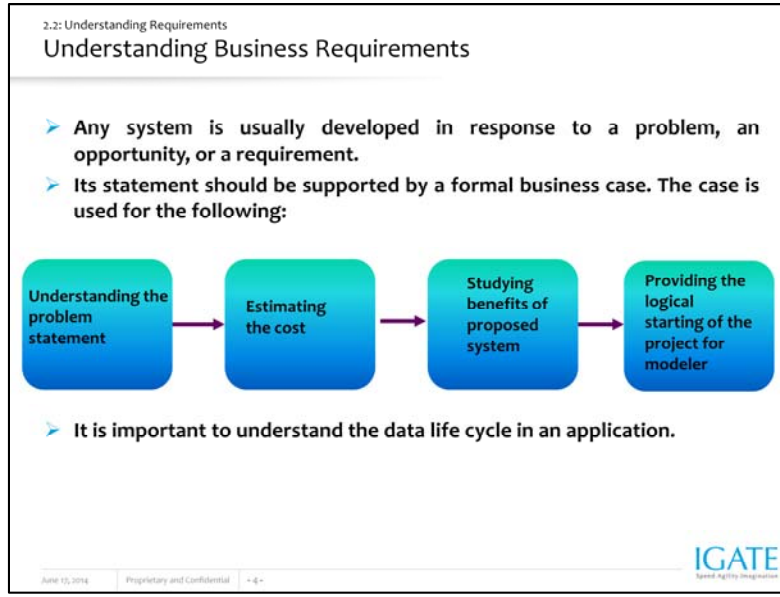


Understanding Business Requirements:

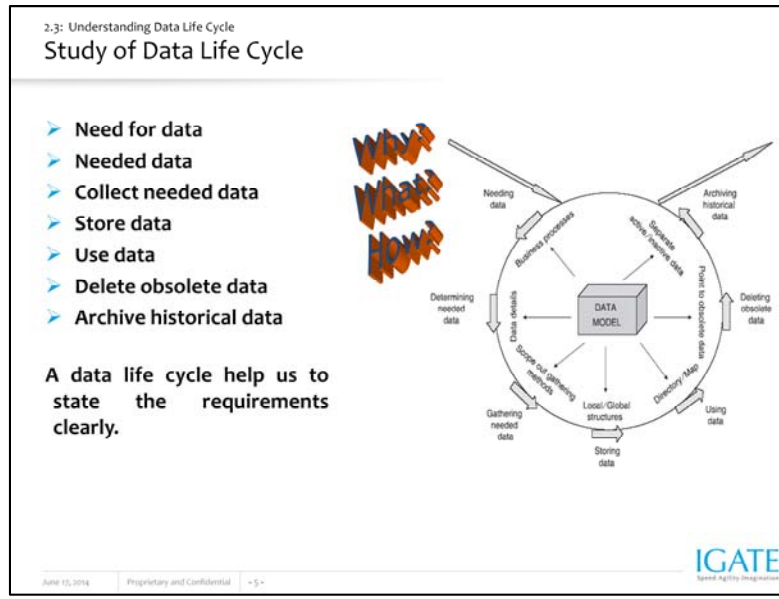
Typically, the business case:

- Estimates the costs and benefits
- Studies the risks of alternative approaches
- Recommends a particular direction
- Provides the logical starting point for the modeler in understanding the context and requirements

While understanding the business case, one should specify the following very carefully:

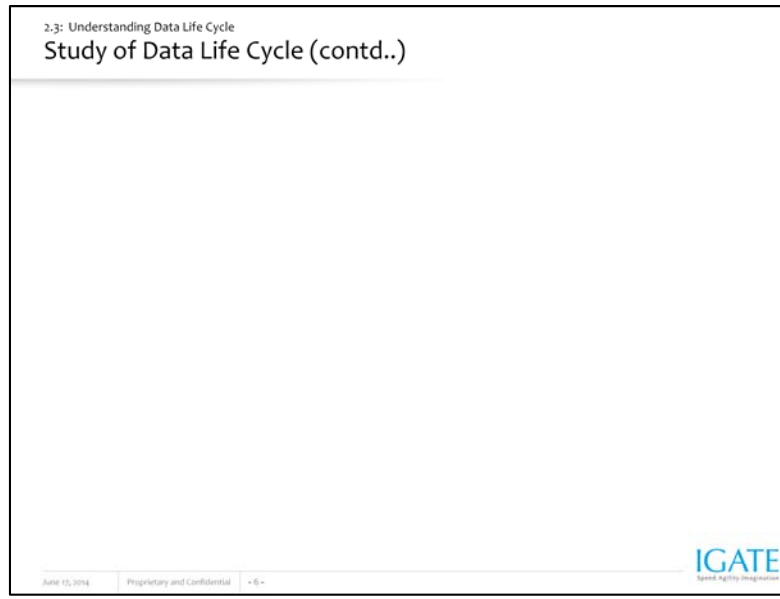
- A detailed justification of the application. Who will benefit from it? Does it have any disadvantages?
- The business concepts, rule and terminology
- The critical success factor to the application
- The scope of the system
- System size and time requirement
- Performance related requirements, if any
- Expected life of application
- Connectivity or interface with other existing or expected applications

While understanding the requirements, a modeler needs to study the overall data life cycle and how to use the data at various stages.



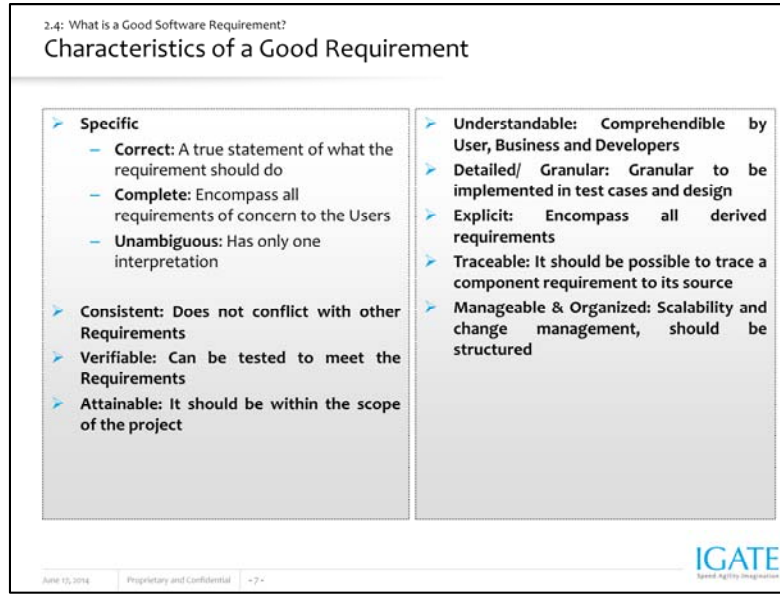
Study of Data Life Cycle:

- **Need for Data:** After the business process or a problem is identified, you need to understand the various data-related needs of the business process. The data passes through various stages and it is important to decide how to use it in every stage.
- **Needed Data:** It is used to clearly record what data is needed to run the application. What needs to be recorded and what should be discarded. All the required details of the needed data elements are discovered and documented in the data model.
- **Collect Needed Data:** After identifying which data is needed, collection of data takes place. Here, you apply a sort of filter to gather only the data that is needed and ignore the irrelevant data that is not necessary for any of your business processes. One needs to clearly define the various methods of collecting data.
- **Store Data:** The collected data must be stored in the database using appropriate methods of storage. You need to decide and include the storage medium after considering the optimal storage method to suit the needs of users for accessing and using data.
- **Use Data:** That is the ultimate goal in the data life cycle. At this stage, you perform the following activities:
  - Combine various data elements
  - Retrieve data elements for usage
  - Modify and store modified data
  - Add new data created during the business processes



Study of Data Life Cycle (contd.):

- **Delete Obsolete Data:** After a particular time period, a particular data element in storage may become old and obsolete. After a period of time, the data element may no longer be useful and, therefore, not accessed in any transactions at all. Presence of such data in the system will slowdown the performance and introduce maintenance-related issues. Deleting such obsolete data becomes an ongoing operation. A particular data element may fall into the category qualified for deletion. At this stage, the data model is used to examine the various data elements that can be safely deleted after specified periods.
- **Archive Historical Data:** Some data elements could be useful even after any activity on those data elements had ceased. Historical data can be used in the data warehouse of the organization. Any such useful data elements are removed from the current database and archived into a separate historical repository for further use.

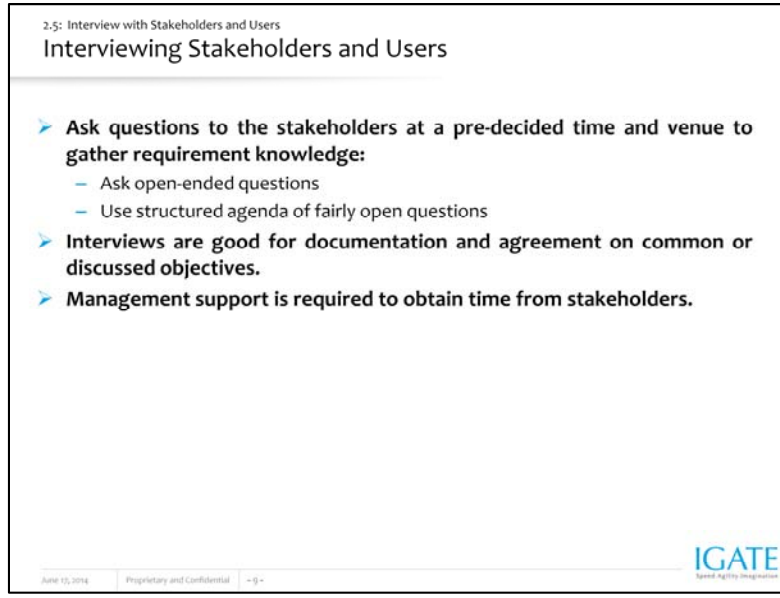


Characteristics of a Good Requirement:

- Meeting the customer's real needs is one of the goals of developing a system. If the system does not meet the customer's needs, then the perceived value of the system diminishes.

Collection of Business Requirements:

- Interviews and workshops are the essential techniques for requirements gathering.
- You need to be very careful about using data models as your means of communication during these initial interviews or workshops. In fact, use anything but data models: UML Use Cases and Activity Diagrams, plain text, data flow diagrams, event diagrams, function hierarchies, and/or report layouts.
- CEOs and other senior managers may not be familiar with the details of process and data but are usually the best placed to paint a picture of future directions.
- Business experts, end users, and "subject matter experts" are the people we consult in order to understand the data requirements in depth. Do not let them design the model—at least not yet! Instead, encourage them to explain the processes and the data they use and to examine critically how well their needs are met.


2.5: Interview with Stakeholders and Users
Interviewing Stakeholders and Users
Ask questions to the stakeholders at a pre-decided time and venue to gather requirement knowledge:
Ask open-ended questions
Use structured agenda of fairly open questions
Interviews are good for documentation and agreement on common or discussed objectives.
Management support is required to obtain time from stakeholders.
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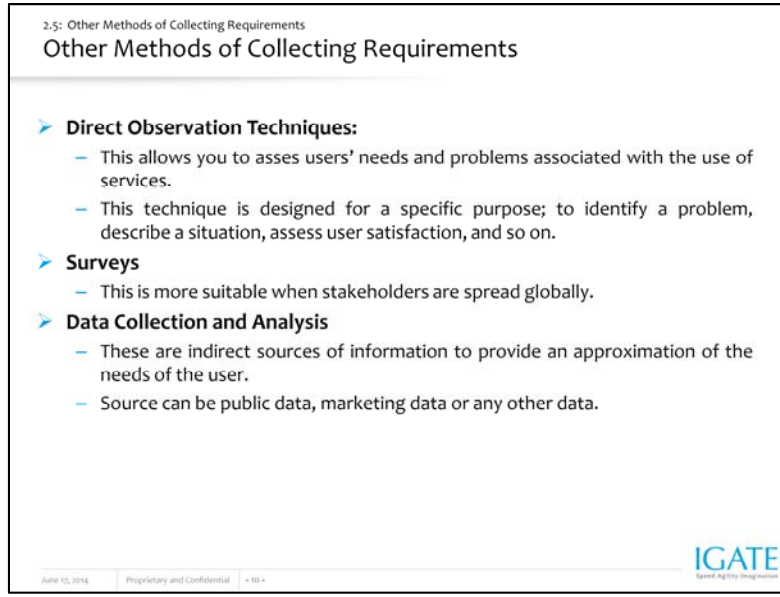


Other Methods of Collecting Requirements:

Direct Observation Techniques

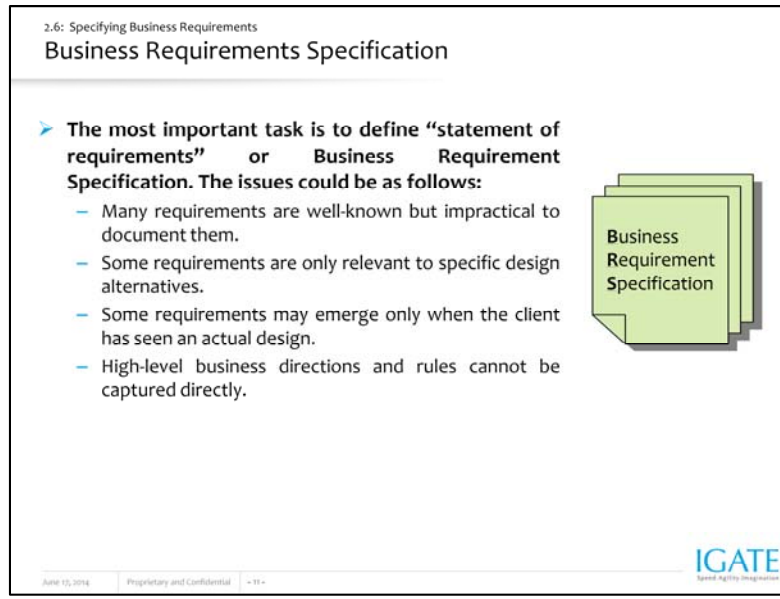
It reveals details which other methods cannot.
It also has limitations such as the following:
a) Extremely time consuming
b) Expensive and requires careful observation
c) Results maybe hard to analyze as it yields too much data

Surveys

- Surveys are more suitable when stakeholders are spread across locations.
- They are used to collect information from many users in less time.

Data Collection and Analysis

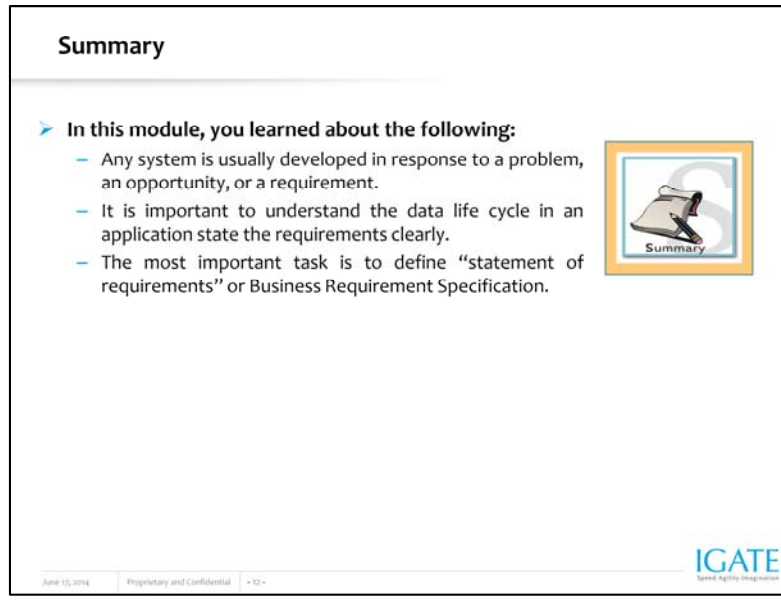
- Indirect sources of information to provide an approximation of the needs of the user
- Source can be public data, marketing data, or any other sources.



Business Requirements Specification:

Some of the issues with the preparation of BRS document:

- Many requirements are well-known to the designer and client ("The house must be structurally sound; the shower requires both hot and cold water.") and it would be impractical to try to document them in full.
- Some requirements are only relevant to specific design alternatives ("The shelves in this cupboard should be widely spaced," only makes sense in the context of a design that includes the cupboard).
- Some requirements may emerge only when the client has seen an actual design ("I like to sleep in complete darkness." or "I don't want to hear the kids practicing piano.").
- high-level business directions and rules cannot be captured directly: "We need to be able to introduce new products without redesigning the system."



Add the notes here.

Review Question

- Question 1: _____ is more suitable when stakeholders are spread globally.
- Question 2: _____ are good for documentation and agreement on common or discussed objectives

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