

ICT Selection Training Course

Module 2: **Requirements Analysis** Duration 2 hours



- **Course Series Introduction**

- What is Digital 20/20 ICT Selection Training?

- Who is it for?

- Why is it helpful?

■ **Module 2(i) : Requirements Analysis**

Getting down to brass tacks

Indicative Content

- » Requirements Identification tools
 - SWOT analysis
 - PESTLE analysis

- » Requirements Analysis tools
 - People Oriented Analysis
 - Use Case
 - Entity-Relationship Diagrams (ERDs)

- » Specifying requirements

- **By the end of this module you should be able to:**
 - ☐ Evaluate the feasibility of a proposal for an ICT project;
 - ☐ Scope the requirements of an ICT project/initiative;
 - ☐ Consider requirements from a user perspective;
 - ☐ Consider requirements from an operational perspective;
 - ☐ Consider requirements from a data perspective.

□ Self Study/Assessments

- At the end of this module you will be provided with a copy of course notes containing:
 - △ reference URLs
 - △ narrated course materials
 - △ exercises and assessments.

▪ Requirements Analysis Introduction

- ❑ What is the difference between identifying requirements and analysing them?
- ❑ When don't you need to analyse requirements?
- ❑ When do you need to analyse requirements?
- ❑ How might you go about it?

■ Getting Into the Mind-Set

Scenario

To illustrate the concepts that follow in this module, let's take the following scenario as an example.



You are a retail company selling chocolates. Your customers would like to be able to purchase your products on-line suggesting that you should develop a functional (e-commerce) website.

You already have an 'about-us' website and your initial thoughts are simply to plug in your product database which you estimate could be achieved within 6 weeks.

▪ SWOT Analysis

■ **SWOT** is an acronym for **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats. A **SWOT** analysis provides a good framework for assessing a business proposition, or in fact, any idea.

The process

△ Strengths - identify the attributes of the organisation that should prove helpful in achieving the proposal objective(s);

△ Weaknesses - identify aspects of the organisation that may be detrimental towards achieving the objective(s);

△ Opportunities - consider external conditions that may be helpful in achieving the objective(s);

△ Threats - consider external conditions which might adversely affect the proposal.

- A SWOT Template

STRENGTHS		WEAKNESSES	
Prompts	Findings	Prompts	Findings
OPPORTUNITIES		THREATS	
Prompts	Findings	Prompts	Findings

- **SWOT Analysis**

- △ Assessing the results

- △ Was it useful?

▪ PESTLE Analysis

○ PESTLE is an acronym for **P**olitical, **E**conomic, **S**ociological, **T**echnological, **L**egal, **E**nvironmental.

The process

- △ Consider how **p**olitical issues may affect achievement of the project;
- △ Consider how **e**conomic issues may affect achievement of the project;
- △ Consider how **s**ocial issues may affect achievement of the project;
- △ Consider how **t**echnological issues may affect achievement of the project;
- △ Consider how **l**egal issues may affect achievement of the project;
- △ Consider how **e**nvironmental issues may affect achievement of the project.

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▪ PESTLE Analysis - Ranking the Results

PESTLE factor	Element/Issue	e.g.	Weight	Score	Weight -ed Score
Political	Element 1 Element 2 etc	Healthy Eating Campaign	3	1	3
Economic	Element 1 Element 2 etc	Credit crunch – low interest rates Credit crunch – low disposable income	5 3	5 5	25 18
Social	Element 1 Element 2 etc	Health Issues	5	1	5
Technological	Element 1 Element 2 etc	e-commerce payment facilities	5	3	15
Legal	Element 1 Element 2 etc	e-commerce legislation International Trade	5 3	4 4	20 12
Environmental	Element 1 Element 2 etc	Cocoa production	5	2	10

- **PESTLE Analysis**

- △ Assessing the results

- △ Was it useful?

- **People oriented analysis**

- One of the challenges in ICT is in understanding the people involved, understanding the technology available, and bridging the gap in between.

- **The process**

- △ Who?

- △ How?

- △ When?

- △ Why?

■ USE CASE Analysis

● Use Case Modelling is a method that enables you to model functional requirements. It is a people and process oriented methodology.

The process

1. Consider who/what will be interacting directly with the system. i.e. the actors;
2. Select one of the actors;
 - 2.1. Identify what the actor needs from the system;
 - 2.2. Identify any other interactions they expect to have with the system;
 - 2.3. Each process becomes a Use Case.

- **The Process contd.**

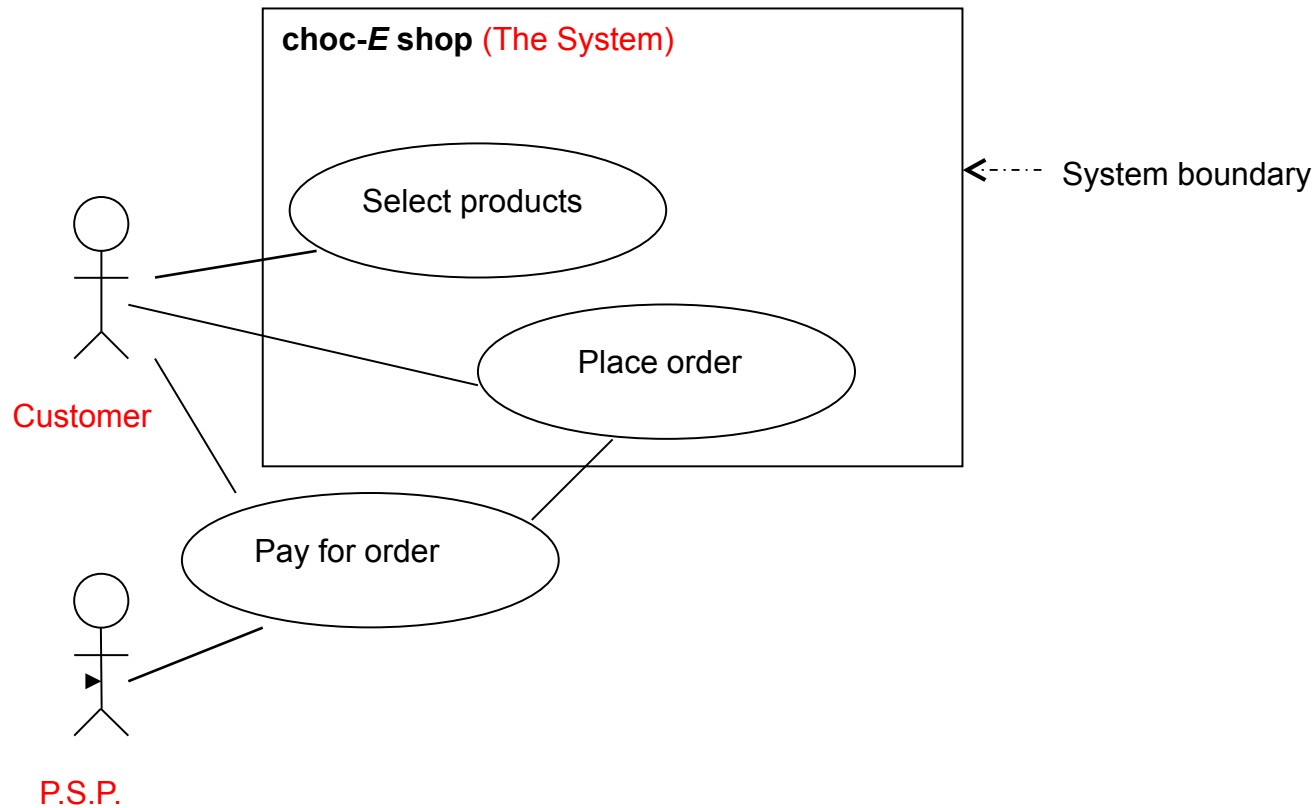
3. Identify which Use Cases take precedence for the actor.

4. Decide on the most typical course of events for each Use Case when that actor is using the system. This becomes the basic course.

5. Describe the basic course in the narrative for each Use Case. Define it in terms of what the actor does and what the system does in response. Use action/goal oriented terms rather than by using implementation specific terms. i.e. the ***what*** not the ***how***.

6. Repeat steps 2 to 5 for all other actors.

- A simplified Use Case diagram for placing an order via an e-commerce system




▪ Use Case Narrative

Use Case for **Place Order**: Basic Course


1. The system displays the customer's selections.
2. The customer confirms their selections.
3. The system displays the balance payable.
4. The customer accepts the balance payable.
5. The system offers the payment type options.
6. The customer selects a payment type.

- **Use Case Analysis**
 - △ Assessing the results
 - △ Was it useful?

▪ Data Oriented Requirements Analysis

 Data analysis involves the identification of the data needed to support the process (commonly referred to as entities or objects), placing these entities into logical groups, and the defining the relationships between the groups.

Entity Relationship Diagrams - ERDs

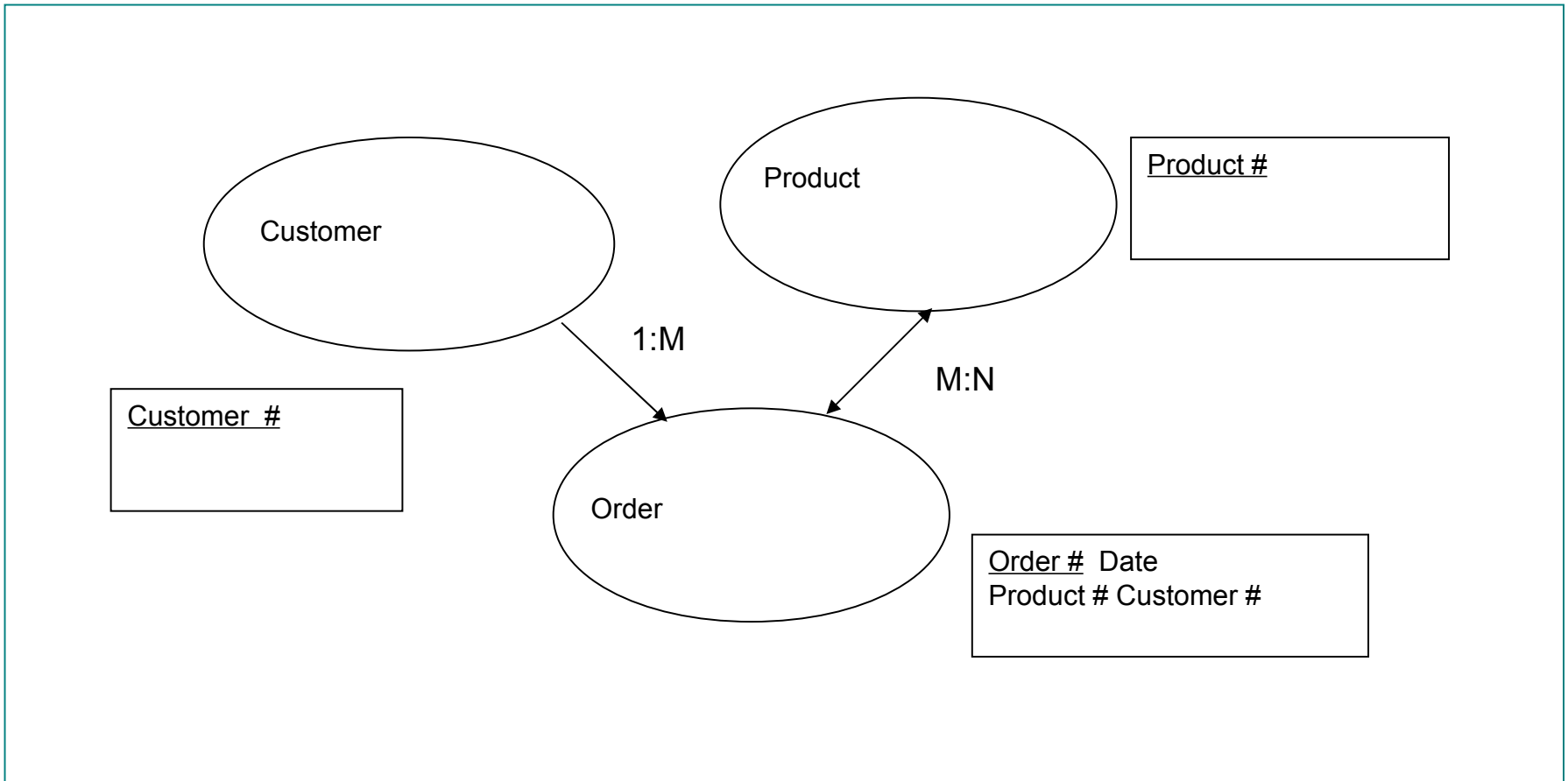
 facilitate the graphical representation a database system, using:

△ Entities

△ Relationships – the degree

△ Attributes – primary key and candidate keys

- A partial ERD illustrating the customer/order view of our e-commerce system



- **Data Oriented Analysis**

- △ Assessing the results

- △ Was it useful?

▪ Specifying ICT Requirements

“The UK Government spends more on ICT than any other government and yet the history of UK government ICT projects is littered with budget overruns, delays and functional failures. Huge centralised databases have been created, with a thoroughly casual approach to safeguarding private data.” **Source Computer Weekly 2009**

Considerations/ Challenges

△ Paralysis by Analysis

△ Definition Soup

△ Understanding and interpreting requirements

▪ Summary (1) In this Module We Have:

- ☐ Evaluated the feasibility of a proposal for an ICT project and;
- ☐ Scoped the requirements of an ICT project/initiative.

using:

- △ SWOT and PESTLE

- ☐ Analysed and defined requirements from a user and operational perspective using:

- △ Use Case

- ☐ Analysed and define requirements from a data perspective using:

- △ ERDs

- **Summary (2) In this Module We Have Also:**
 - Appreciated the tools and techniques that can be used when identifying and analysing ICT requirements;
 - Discussed specifying conceptual ICT requirements.

Take Aways

- Requirements Analysis Know-how and Thinking.
- Requirements Analysis Reference Materials.
- Self study exercises and self-assessments.
- Competence and confidence!

▪ Other Modules in this Series

- Business Case Analysis
- Solution Sourcing, Selection and Procurement
- Solution Implementation – Small Scale Projects
- Solution Implementation – Medium/Large Scale Projects
- Working with Suppliers
- Post Implementation Review