INTRODUCING THE DSDM® AGILE PROJECT FRAMEWORK
(LESSON 08B)

PHÂN TÍCH YÊU CẦU PHẦN MỀM (SOFTWARE REQUIREMENTS)

CONTENTS

- **Enough Design Up Front (EDUF)**

- **Lifecycle and Products**

- *Meanings and examples of modelling;*

- *Modelling perspectives;*

- *Modelling within the lifecycle;*

- *Modelling tips.*

DSDM: ENOUGH DESIGN UP FRONT (EDUF)

Traditional approaches use time contingency to reduce risk. Traditional projects use BDUF (Big Design Up Front).

Some Agile projects use NDUF (No Design Up Front). DSDM uses the EDUF (Enough Design Up Front) approach. It is because requirements are sometimes unknowable up front or are likely to change during the project.

NDUF   EDUF   BDUF

NDUF (NO DESIGN UP FRONT)

- You can start with the development practically **immediately,** without investing any time in a design. Often a product vision and a rough product backlog serve as the starting point. "Sprint zero" on the first productive iteration resp. «Sprint 1» is being prepared.

- During the development, new inputs and ideas are continuously recorded and implemented. Such a free approach requires a great deal of experience. Most of them run the risk of developing unstable architectures and investing resources in developments that later turn out to be redundant or unusable.
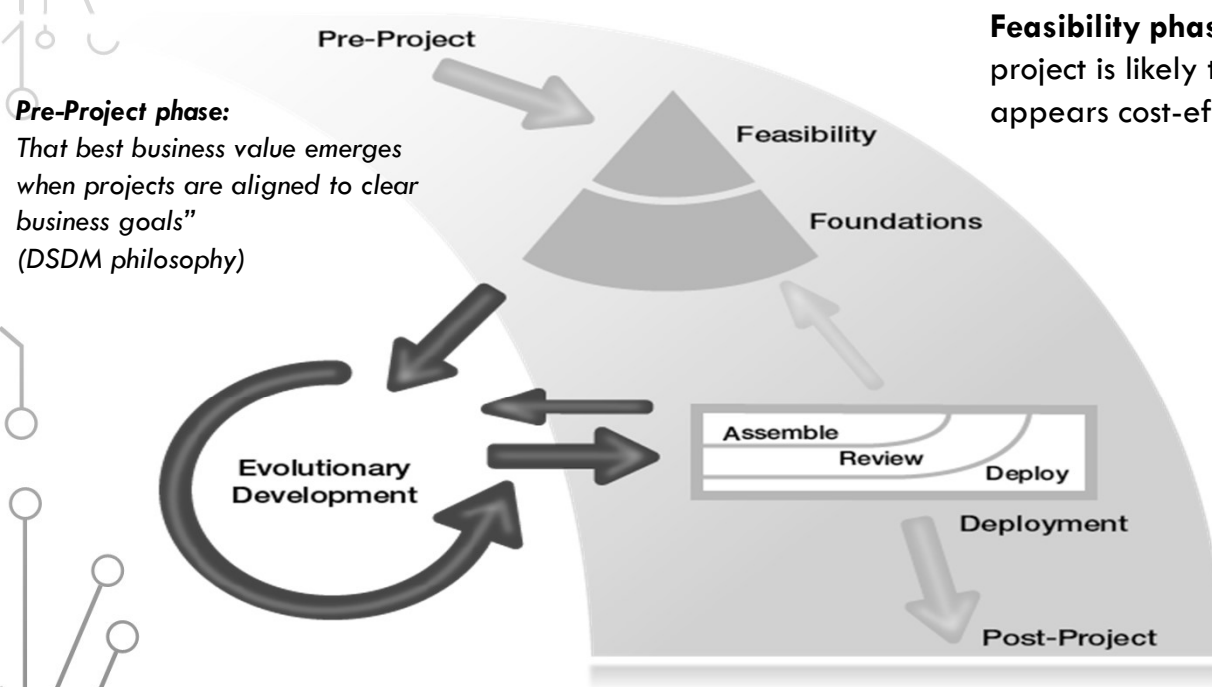

"Big design up front is **dumb,** but doing no design up front is even dumber." (BDUF is stupid, but NDUF is **even more stupid.**)

(**Dave Thomas,** one of the authors of the "Agile Manifesto")

https://www.agileagreement.com/2020/07/21/enough-design-upfront-vor-big-design-upfront/

THE DSDM LIFECYCLE - 1

Feasibility phase: is intended primarily to establish whether the proposed project is likely to be feasible from a technical perspective and whether it appears cost-effective from a business perspective.

Pre-Project phase:
That best business value emerges when projects are aligned to clear business goals"
(DSDM philosophy)

(Firm) foundation phase: It is intended to establish a fundamental (but not detailed) understanding of the business rationale for the project, the potential solution that will be created by the project, and how development and delivery of the solution will be managed.

Pre-Project

Feasibility

Foundations

Assemble
Review
Deploy

Evolutionary
Development

Deployment

(EDUF: Enough Design Up Front)

Post-Project

Evolutionary Development phase: Apply practices such as Iterative Development, time-boxing, and MoSCoW prioritisation, together with Modelling and Facilitated Workshops, to converge over time on an accurate solution that meets the business need and is also built in the right way from a technical viewpoint.

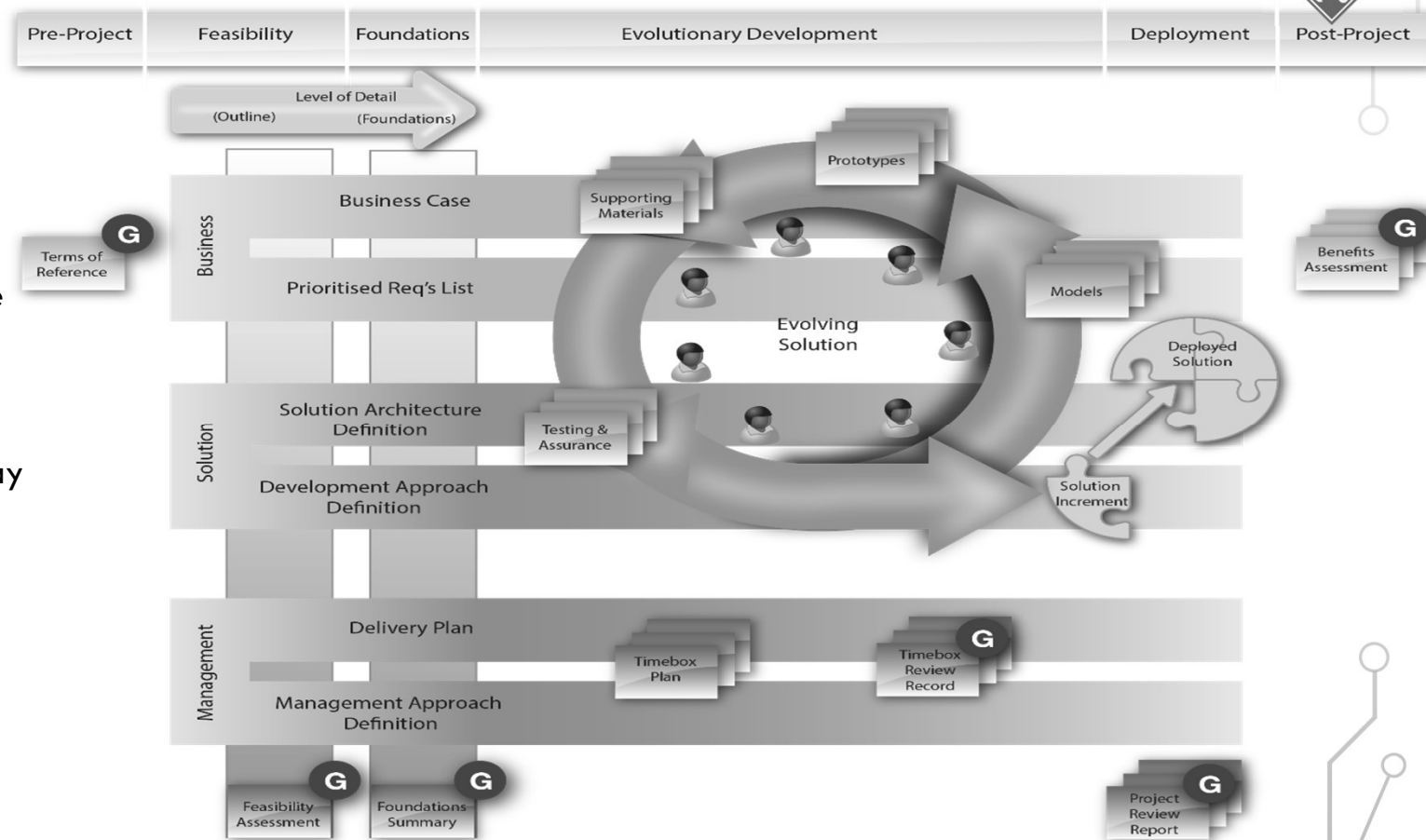# STRUCTURE OF THE DSDM LIFECYCLE PRODUCTS

	Business Focus	Solution Focus	Management Focus
Pre-project			
Feasibility			
Foundations			
Exploration			
Engineering			
Deployment			
Post-project			

PRODUCT OVERVIEW

Orange = Business focused,
Green = elements that contribute
to the **Solution**
Blue = **Project management/**
control interests.
Products with a **'G'** may also play
a part in governance processes

Source: Image from dsdm.org ©
2016

WHAT IS A MODEL?

A model is:

- A description or analogy (to help visualise something that cannot be directly observed);

- A small but precise replica of an item or product;

- A pattern or figure of an item or product to be created.

WHAT IS A MODEL?

Many industries use models (and prototypes) to establish requirements, confirm expectations and test the achievability of objectives. Examples of models include: storyboards; diagrams; scale models (prototypes); and working software (prototypes).

storyboards

scale models

MODELLING PERSPECTIVES

WHAT – The information

HOW – The functions, features and processes

WHERE – The locations at which the business operates

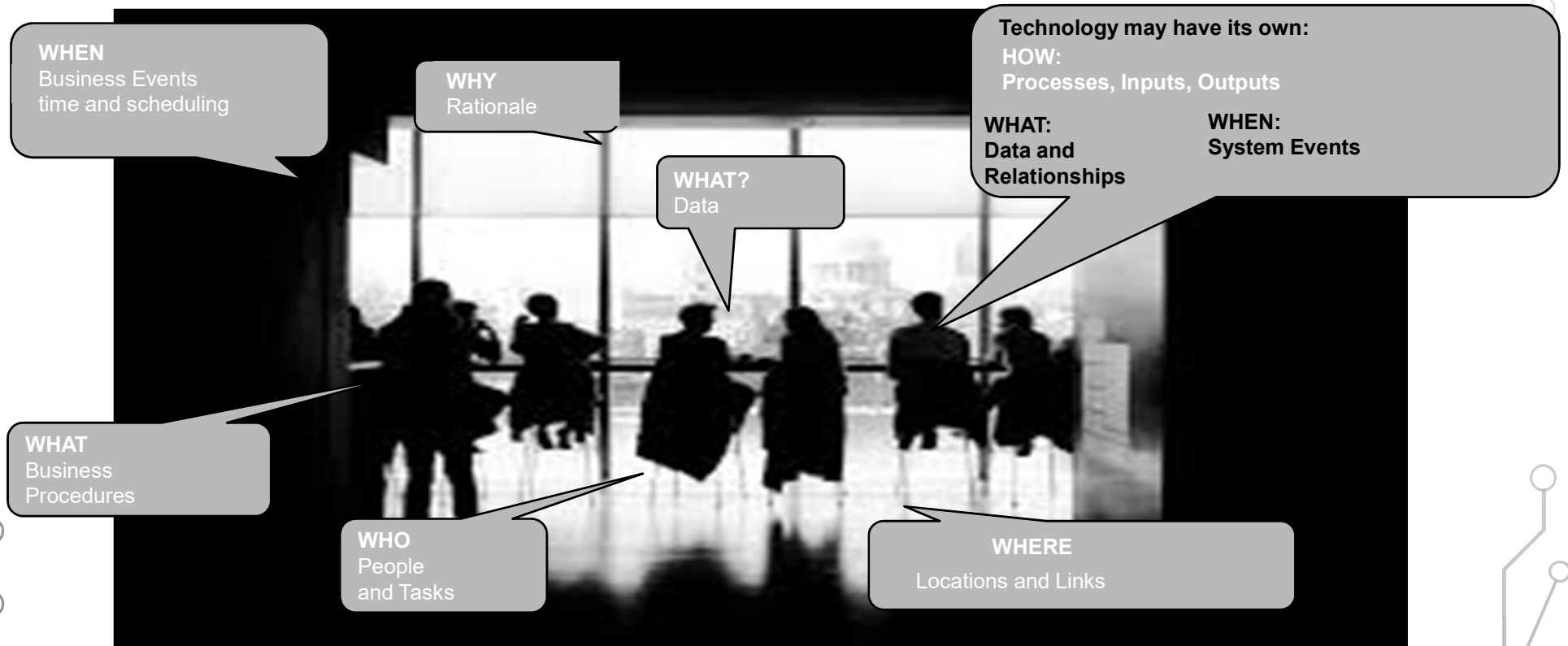**WHO –** The people: customers, users, stakeholders

WHEN – The events of importance (times and scheduling)

WHY – The business objectives and strategy
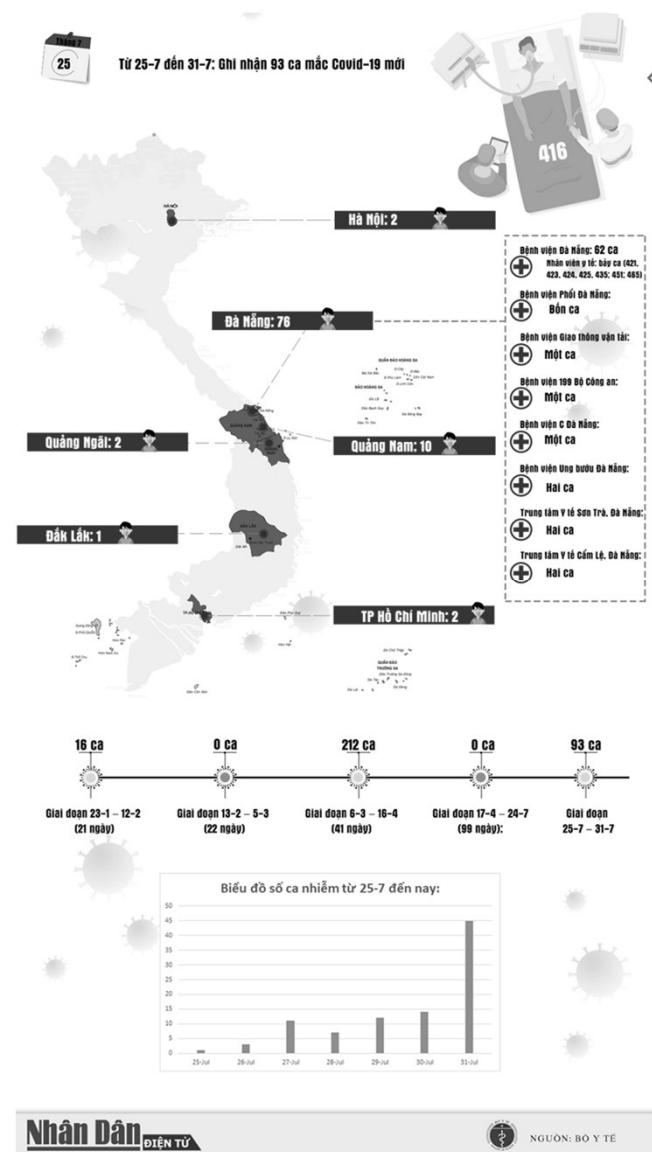
Source: Image from dsdm.org © 2016

MODELLING – USER PERSPECTIVE

WHEN
Business Events
time and scheduling

WHY
Rationale

WHAT?
Data

Technology may have its own:
HOW:
Processes, Inputs, Outputs

WHAT:
Data and
Relationships

WHEN:
System Events

WHAT
Business
Procedures

WHO
People
and Tasks

WHERE
Locations and Links

Source: Image from
pixabay.com © 2016

EXAMPLE

In small groups, one person describes a journey using words only. The others (independently) try to draw the route. How close is the picture to the description?

MODELLING WITHIN THE LIFECYCLE

Feasibility

Scope and Enterprise **Model**

Business Sponsor

Wider Stakeholder Group

Exploration/Design

Detailed System **Models**

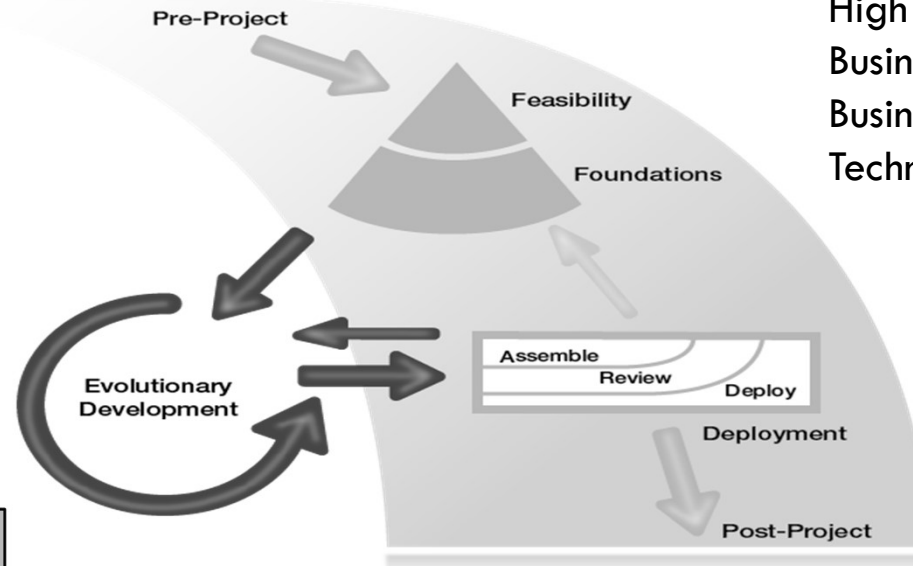Solution Development Team

Engineering/Development

Technology and Component **Models**

Solution Development Team

Foundations

High Level System **Models**

Business Sponsor

Business Visionary

Technical Co-ordinator

Deployment

Functioning, Tested,

Documented System

End Users

Operations

Pre-Project

Feasibility

Foundations

Evolutionary Development

Assemble

Review

Deploy

Deployment

Post-Project

SOME USER-CENTRED TECHNIQUES

User Analysis

- identify user population for the proposed system (job roles, skill levels)
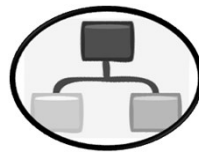
Usability Analysis

- determine characteristics of user interface (non-functional requirements)
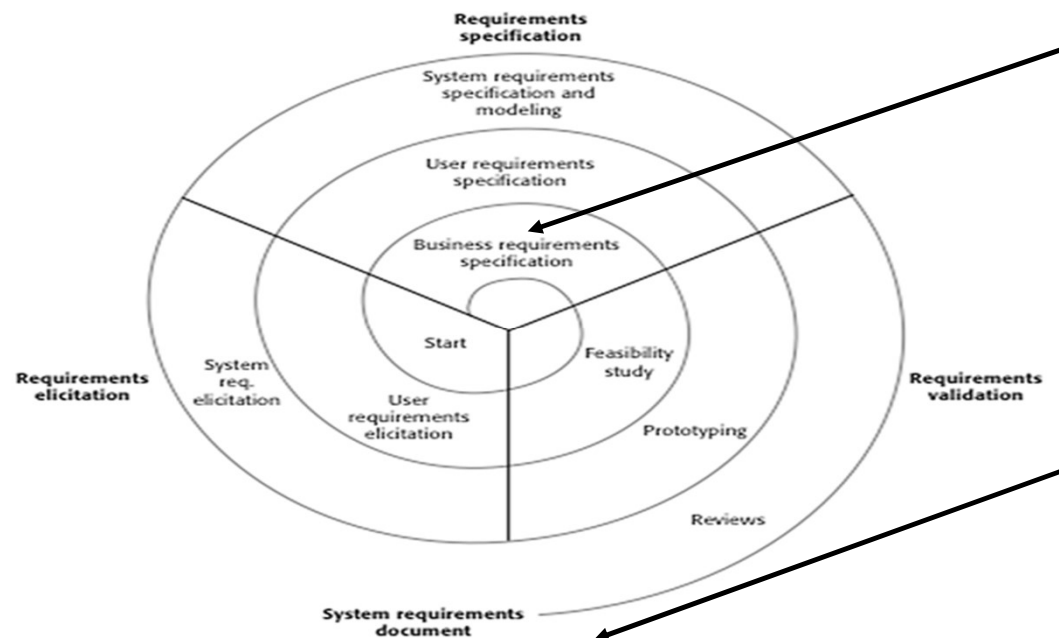
Task Modelling

- identify business events (user tasks)

Task Scenario Definition (& Use Cases)

- identify instances of task execution for a user

DETERMINING THE REAL REQUIREMENTS

Early in the process, most effort will be spent on understanding high-level business and user requirements.

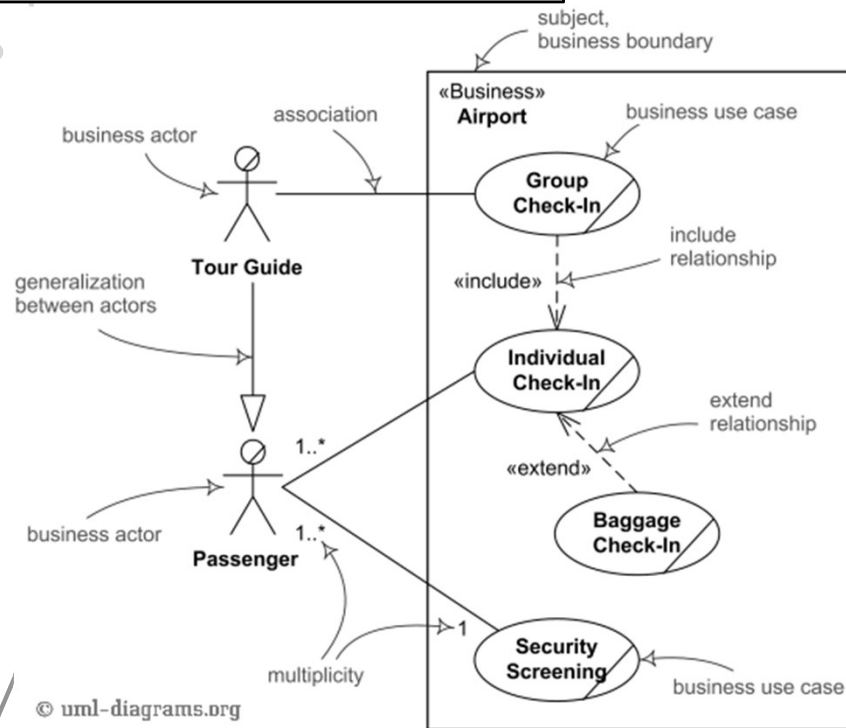Later in the process, more efforts will be spent on elicitation and understanding detailed system requirements.

https://medium.com/omarelgabrys-blog/requirements-engineering-introduction-part-1-6d49001526d3
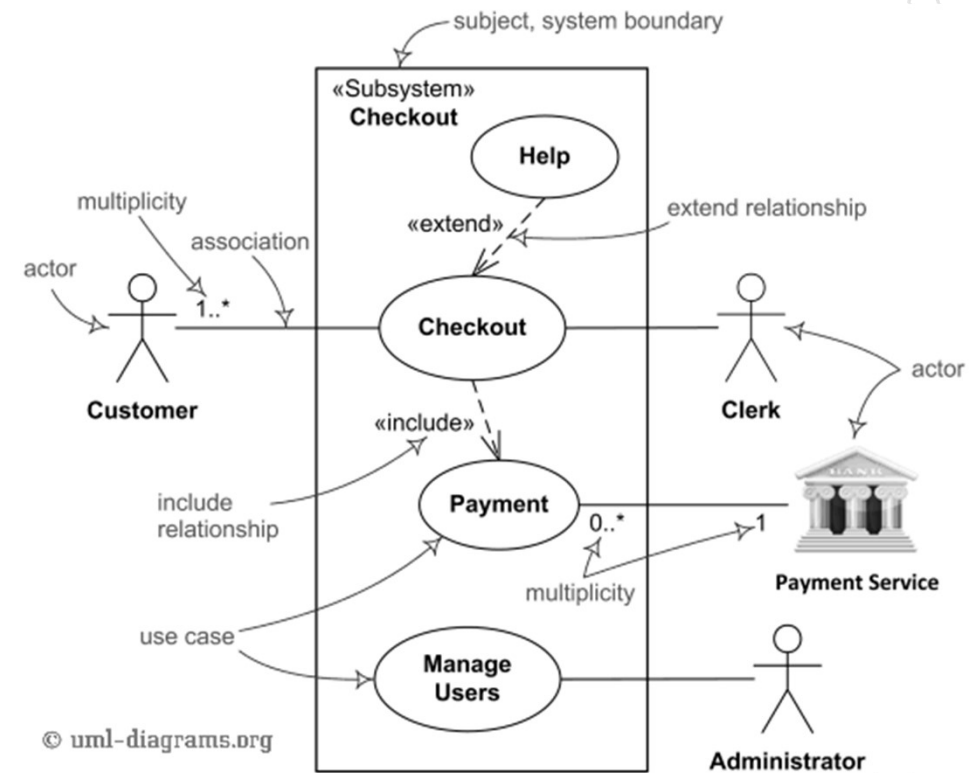
USE CASE DIAGRAMS: TWO WAYS ANALYSIS

Business Use Case Diagrams

Major elements of business use case diagram - business actor, business use case, business boundary, include and extend relationships.
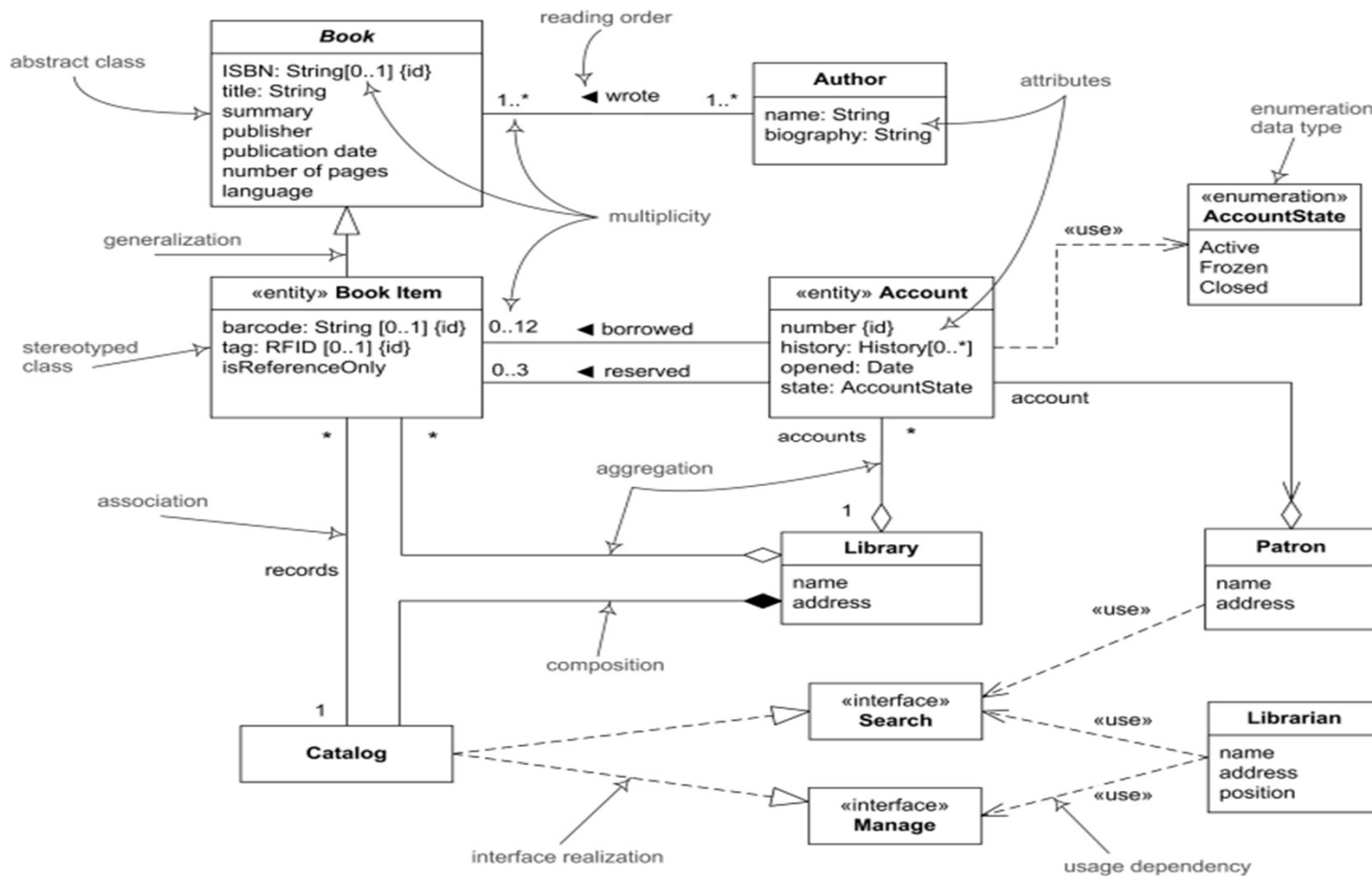
System Use Case Diagrams

Major elements of UML use case diagram - actor, use case, subject, include and extend relationships.

Exemple 2 – Class diagram
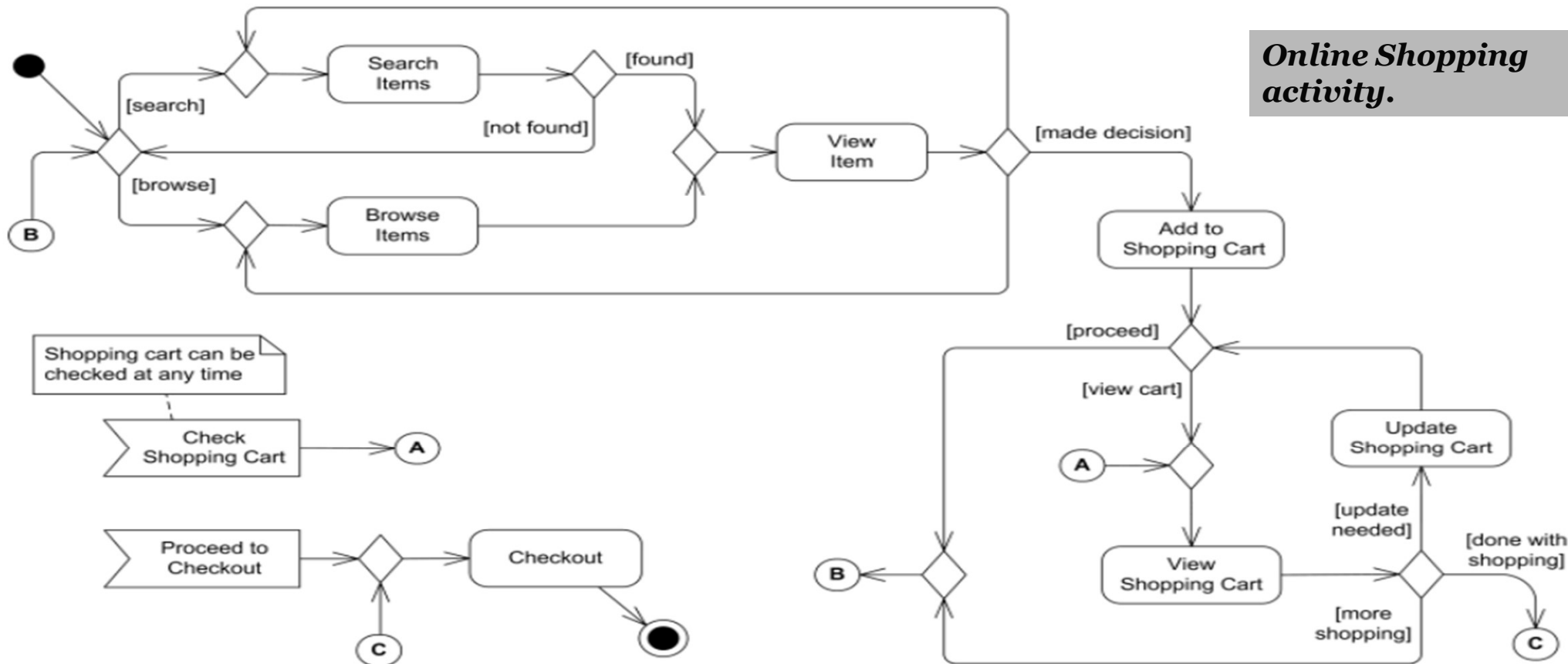

Library Domain Model

Exemple 3 – Activity diagram

Online Shopping activity.

SOME USER-CENTRED TECHNIQUES - 2

User Conceptual Modelling (user object modelling)

- provide a map of the system from the users' perspective

GUI Design

- user interface to support identified tasks

User Interface Prototyping

- provide animated view of proposed system

Source: Image from pixabay.com © 2016

THE 8 PRINCIPLES OF DSDM

1. Focus on business need
2. Deliver on time
3. Collaborate
4. Never compromise quality
5. Build incrementally from foundations
6. Develop iteratively
7. Communicate continuously and clearly
8. Demonstrate control

MODELLING TIPS

Key points to consider are:

- It is easily understood by user and developer;
- It supports the process of incremental refinement;
- Models produced must enhance communication;
- It must fit easily within the Agile framework.

SUMMARY

- **What is modelling?**

  - It is a visualisation process to build focus within a project.

- **Modelling perspectives**

  - When, Why, What, Who, Where and How?

- **Modelling within the lifecycle**

  - Used at all stages by differing stakeholders for varied reasons to ensure project objectives are met.

- **Modelling tips**

  - Make it count! Modelling needs to be easy to understand and fit within all aspects of the life cycle. It will greatly enhance communication.