

PROJECT PLANNING TECHNIQUES

Information technology project planning its flow charts

Case studies in Software project flowcharts

Lecturer. Tuyatsetseg Badarch, PhD. Associate professor

Mongolian National University

PROJECT PLANNING TECHNIQUES

Flowcharts are used to analyze the flow of activities when making a product or service. It presents the relationship between all the important components needed to complete the project.

These components will include

- 1. Organize the planning.**
- 2. Operational risk analysis**
- 3. Allocation of resources**

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MAIN TYPES OF PROJECT FLOWCHARTS

1. Process Flowchart

2. Workflow Diagram

3. Swim Lane Flowchart

4. Value Stream Mapping

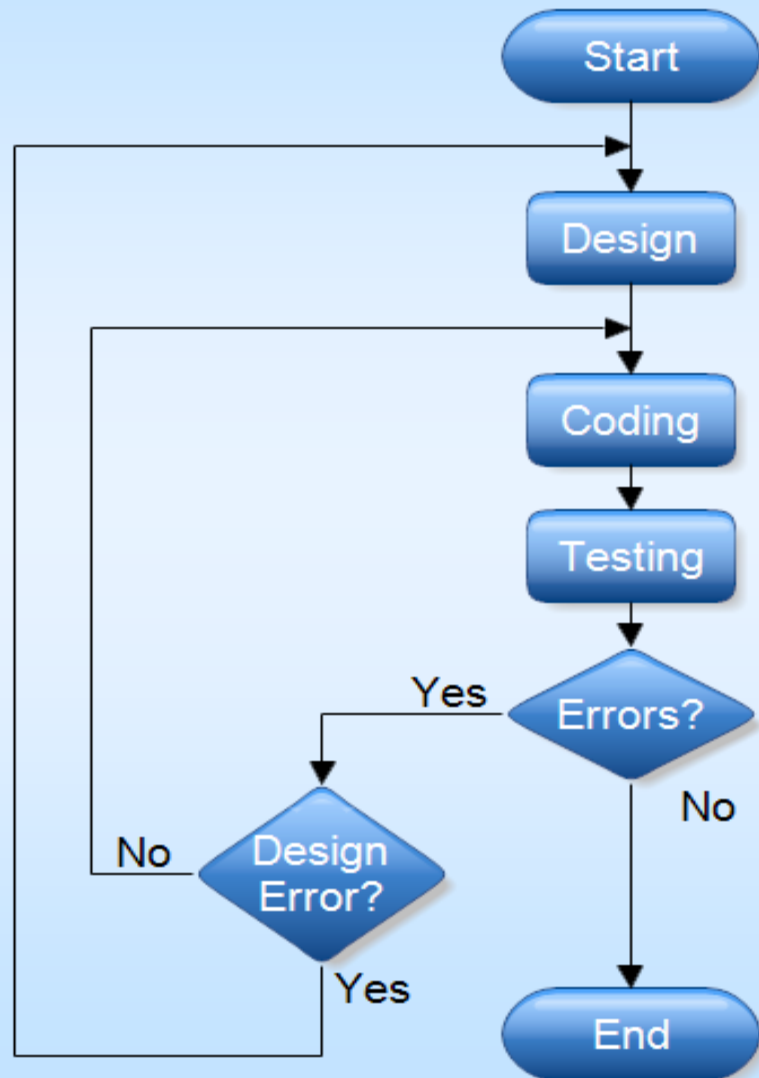
5. Data Flowchart

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Example

**Software
development
PROCESS
FLOWCHART**

Software Development



Lecturer. Tuyatsetseg Ba

WORKFLOW DIAGRAM/FLOWCHART

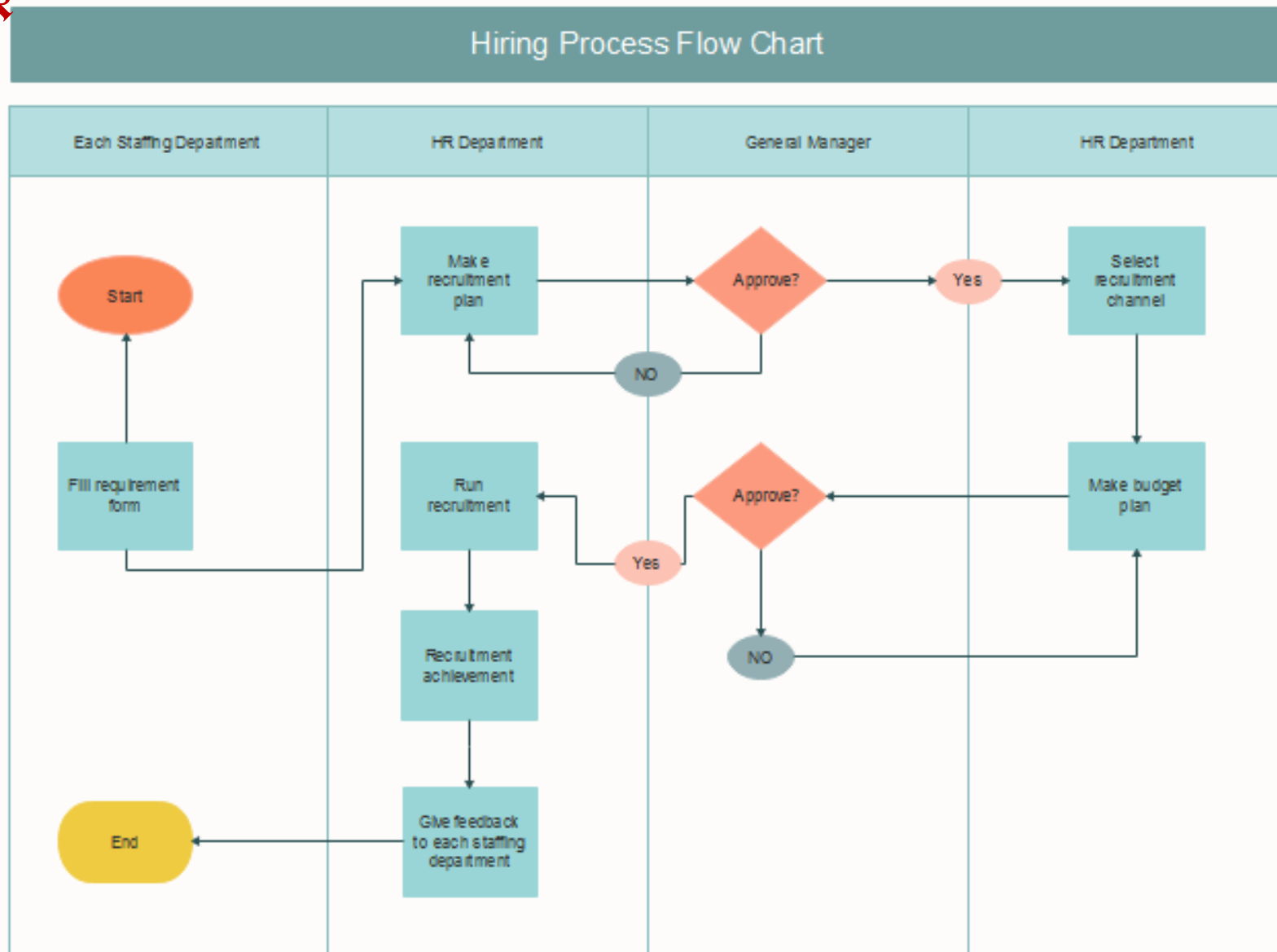
A workflow diagram (also known as a work flowchart) provides a graphic overview of a process. Using standardized symbols and shapes, the diagram describes step by step how the process is completed from start to finish. The objective is to build the process quality that is consistent by standardizing the process.

The workflow diagram/flowchart is used to describe and manage process workflow. Anyone can focus on process integration, team tasks or everything.

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WORKFLOW DIAGRAM/FLOWCHART

Example



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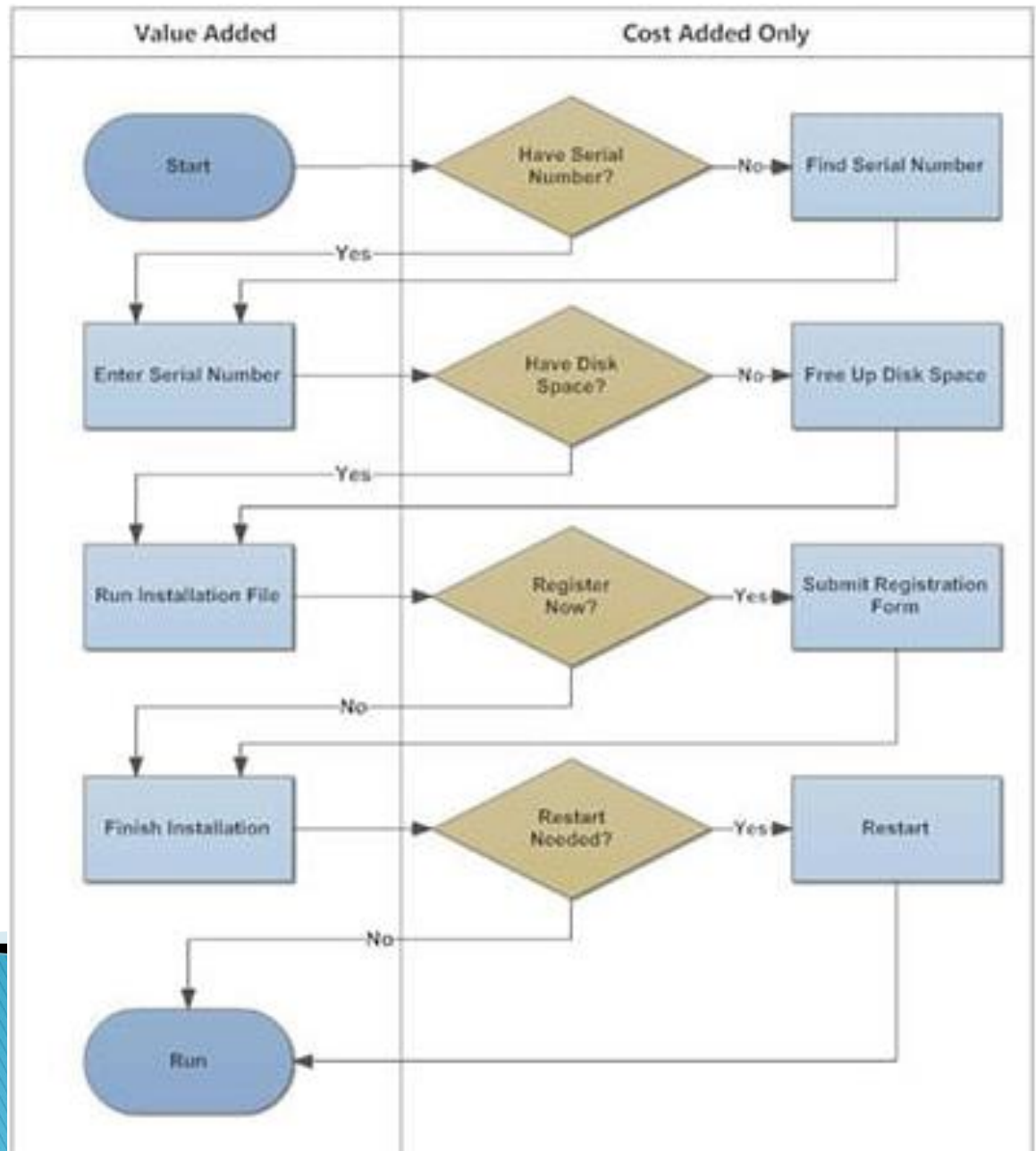
SWIM-LANE FLOWCHART

A swimlane diagram is a type of flowchart that delineates who does what in a process.

Using the metaphor of lanes in a pool, this breaks up the flow into columns, which is helpful for process activities into separate visual categories that define different responsibilities or roles.

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Software installing Swim Lane flowchart



VALUE STREAM MAPPING FLOWCHART

This is a lean flow chart used to analyze and design the flow of materials and information at the system level, mostly used in manufacturing and product development. The purpose of value stream mapping is to maximize value and minimize waste in a number of different ways including:

- ❖ Facilitating clear communication and collaboration**
- ❖ Encouraging continuous improvement of a process**
- ❖ Enabling culture change within an organization**
- ❖ Creating visualizations of delays, excess inventory and production constraints**

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VALUE STREAM MAPPING FLOWCHART IN INFORMATION TECHNOLOGY

Value stream maps for IT make sense when strategic business decisions or particularly abstract IT decisions need to be made. The value stream map can help us to identify bottlenecks, energy drains, latency issues and IT benefit or utility.

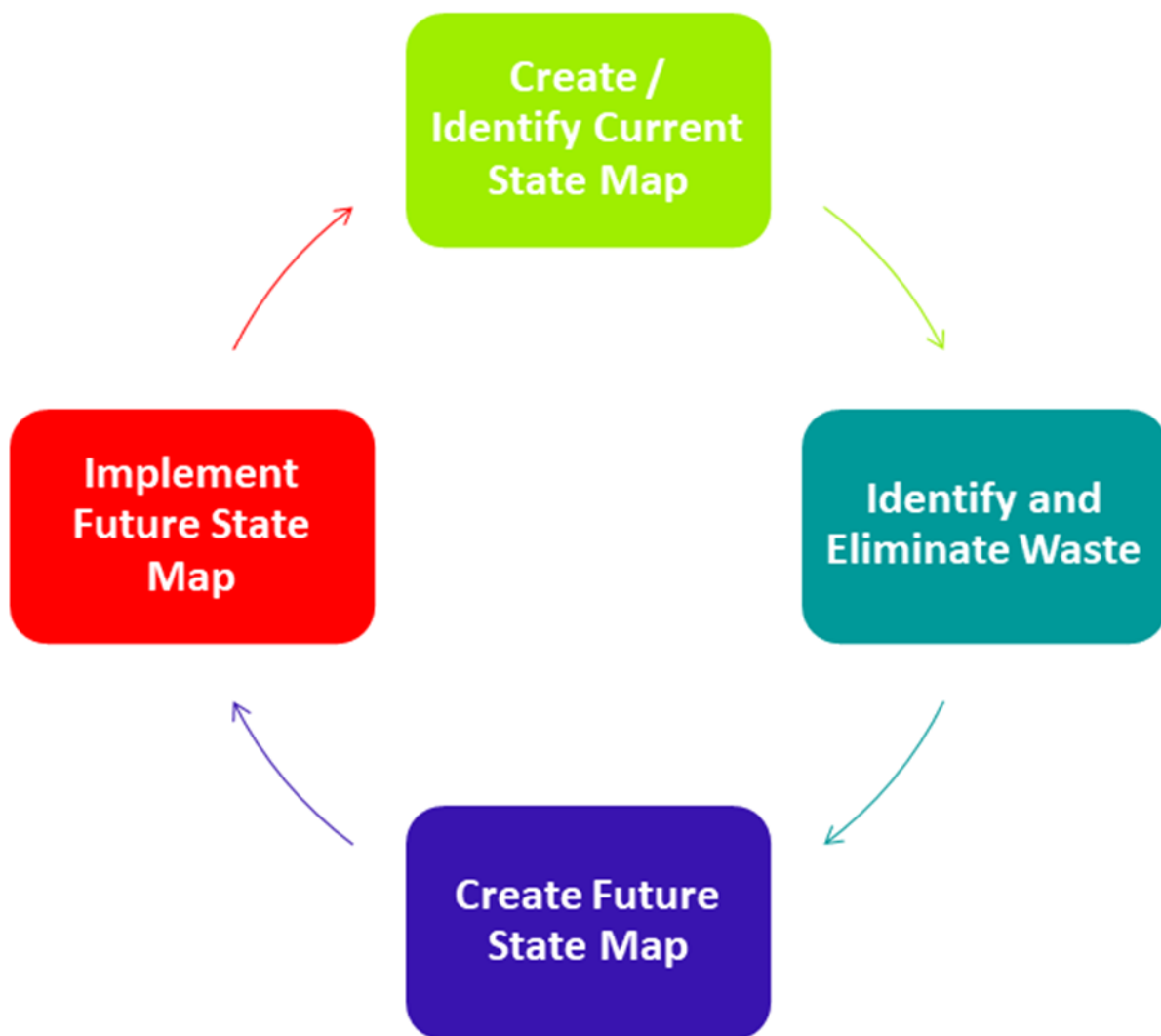
We can use Magic Software's iBOLT Business Process Editor or Flow Editor to diagram the high-level or detailed procedural steps respectively.

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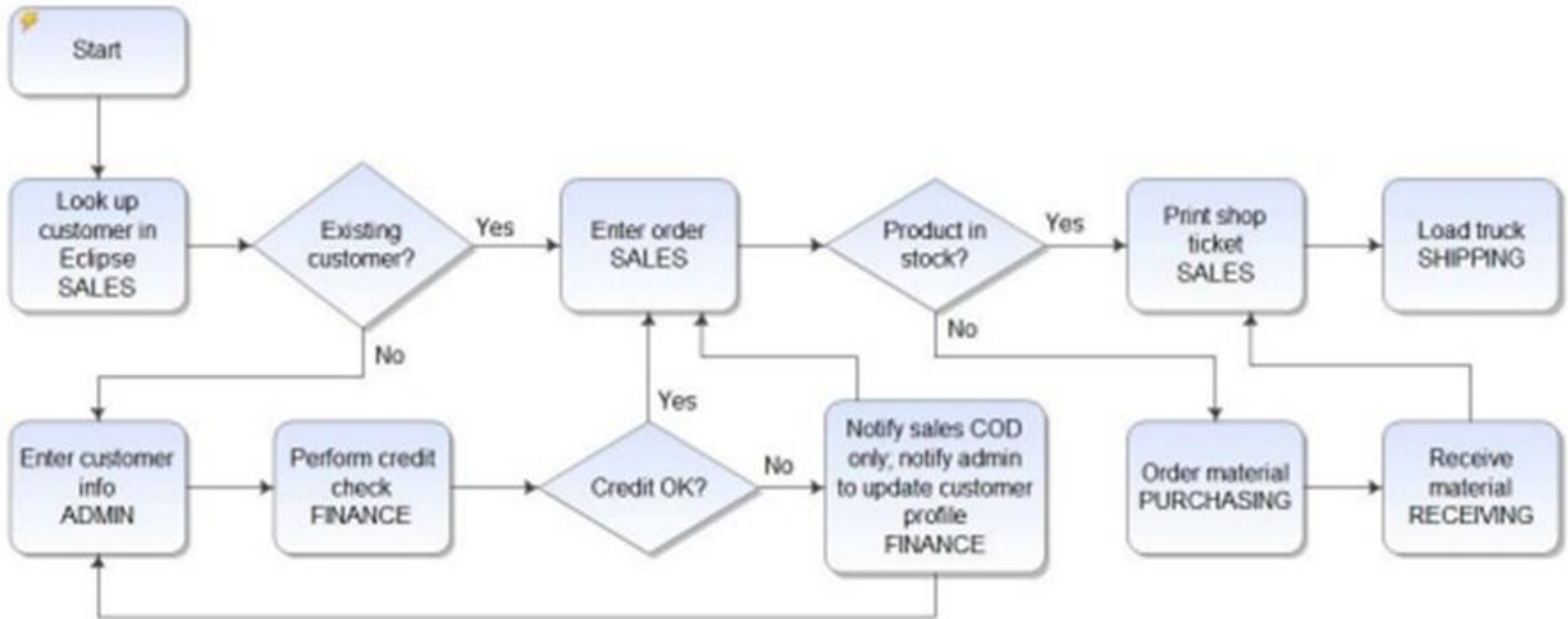
<https://slidetodoc.com/magic-xpi-i-bolt-s-microstrategy-bi-egyptes/>

<https://www.purdue.edu/leansixsigmaonline/blog/value-stream-mapping/>

Value Stream Mapping (VSM) Flowchart



VALUE STREAM MAPPING FLOWCHART IN INFORMATION TECHNOLOGY



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DATA FLOWCHART

This is a great tool when doing a structural analysis. It shows the way data is processed and can be used in data management, modeling and more.

Data Flow Diagram is a graphical uses to describe the flow of data in a system.

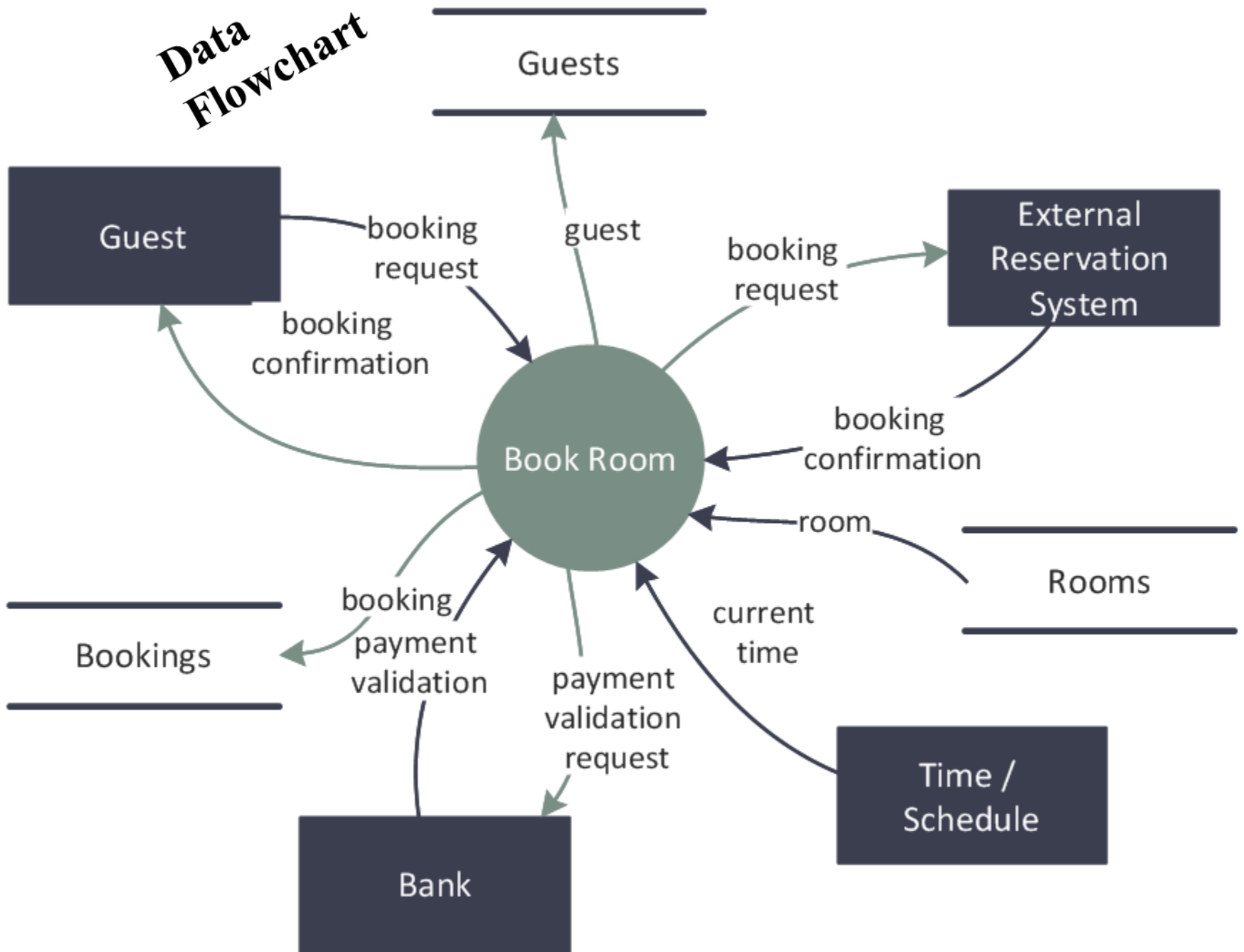
It shows the flow of data as they moving between input and output. The purpose of using Data Flow Diagram as a representative of a system is to provide a simple method of describing how the system work without needed to focus on the detail of the computer systems.

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“Applied Software Project Management”, Andrew Stellman published by OReily, 2010

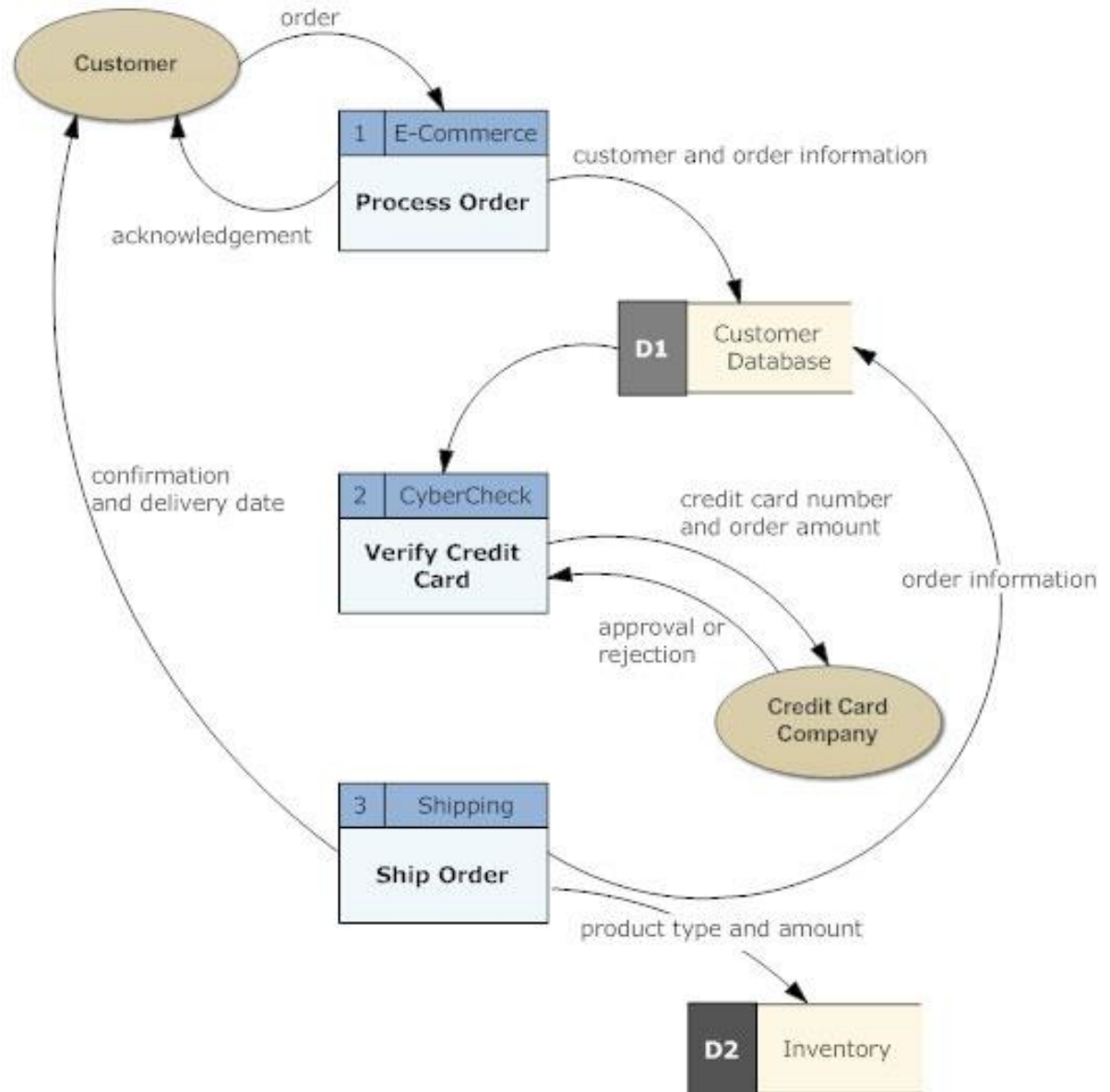
<http://www.stellman-greene.com>

Data Flowchart



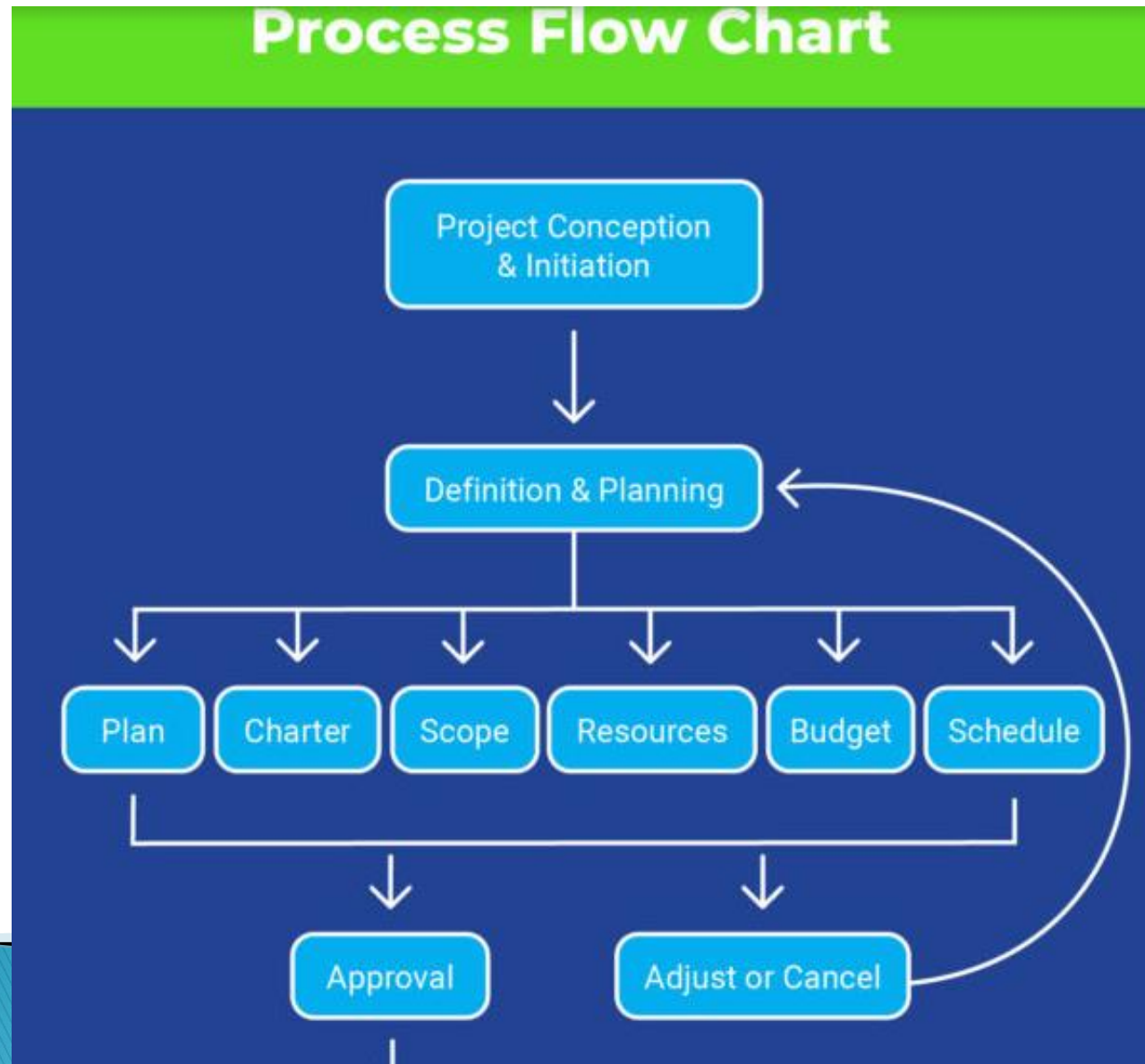
Data Flow Diagram - Online Order System

Example of Data Flowchart



“Applied Software Project Management”,
Andrew Stellman
published by OReily,
2010

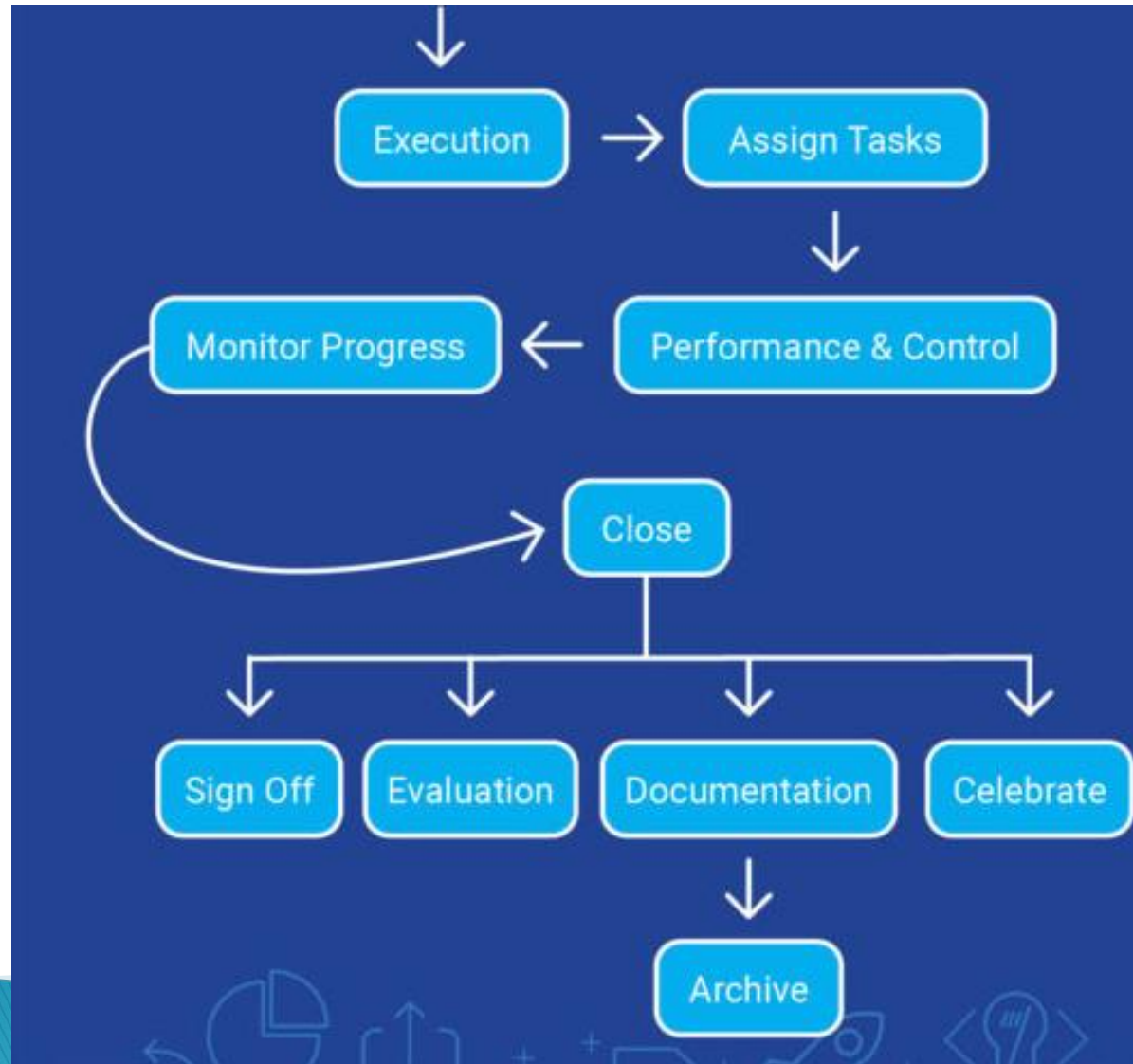
The planning process is more complex in project management. It starts with planning, collecting requirements and the development of scope.



<https://www.projectmanager.com/blog/sample-project-management-flow-chart>

“Applied Software Project Management”, Andrew Stellman published by OReily, 2010

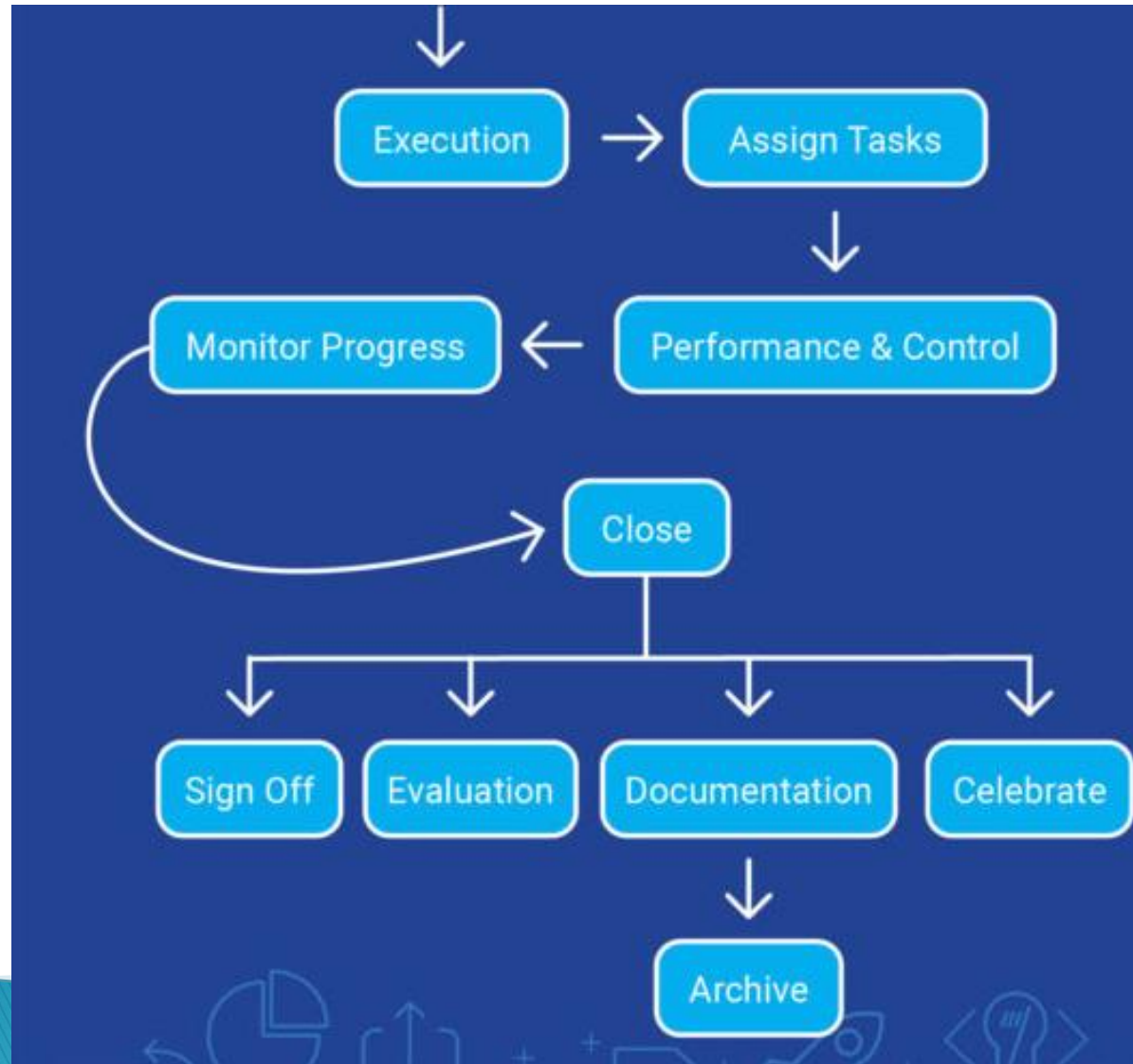
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WHO NEEDS SOFTWARE?

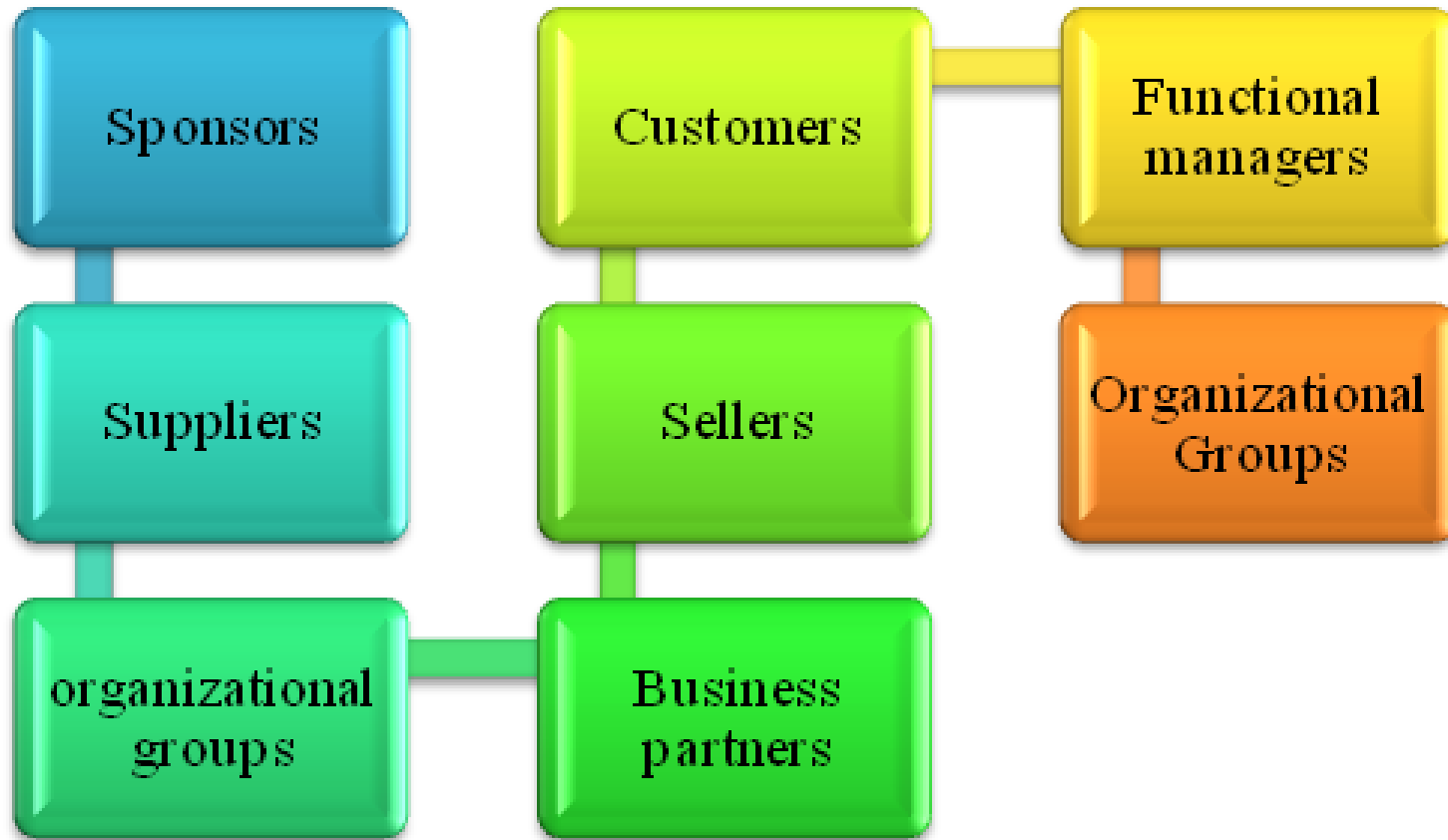
Most software is built in organizations for people with specific needs. A stakeholder is anyone who has an interest (or stake) in the software being completed. A user is someone who will need to use the software to perform tasks. Sometimes stakeholders will be users; but often the stakeholder will not use the software. For example, a senior manager (like a CEO in a company) will usually have a stake in the software that is built (since it affects the bottom line), even if she won't ever use it.

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WHO NEEDS SOFTWARE?



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WHO BUILDS SOFTWARE?

Software is typically built by a team of software engineers, which includes:

**Business analysts or requirements analysts who talk to users and stakeholders
plan the behavior of software and write software requirements**

Designers and architects who plan the technical solution

Programmers who write the code

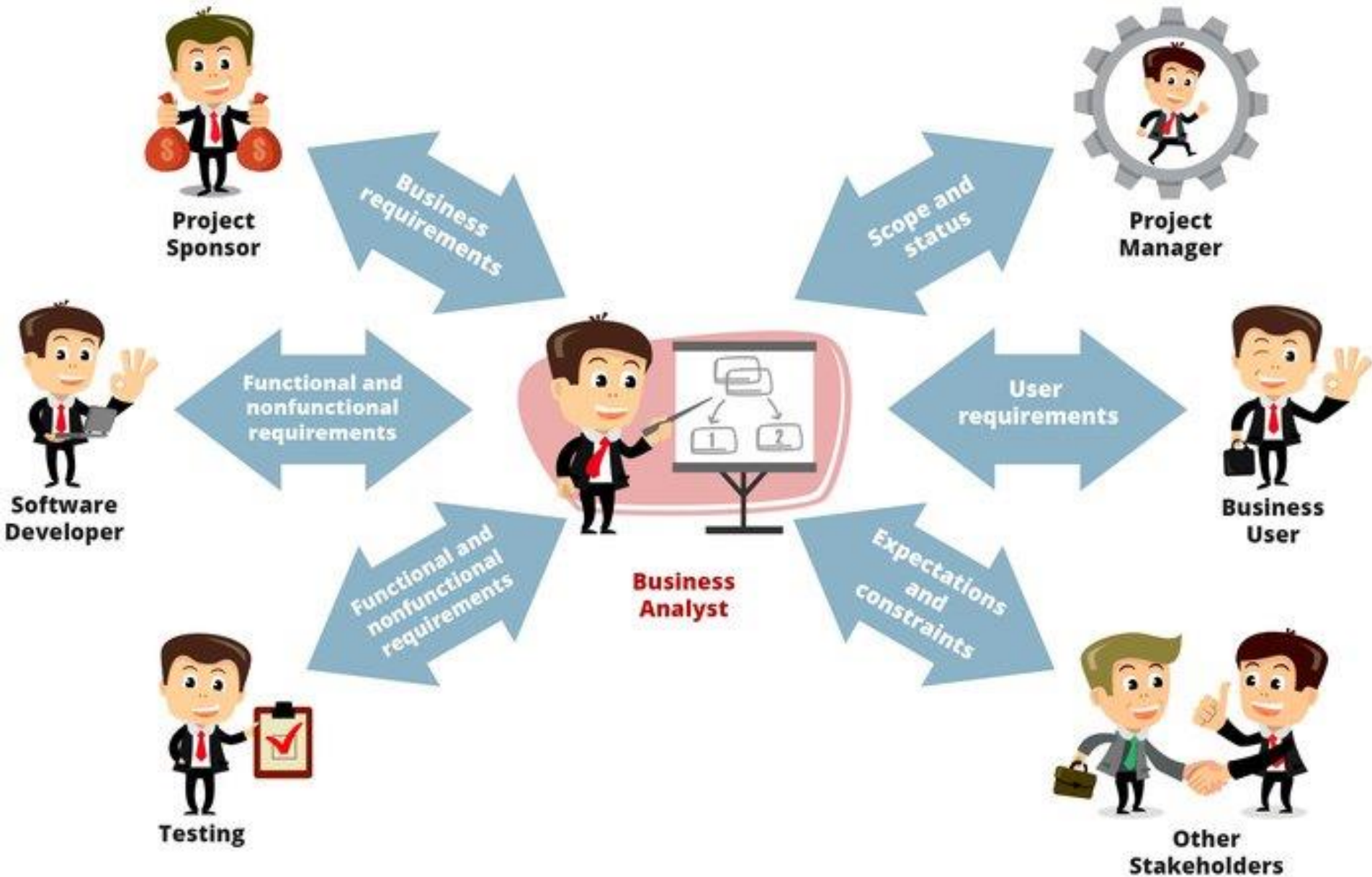
**Testers who verify that the software meets its requirements and behaves as
expected**

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“Applied Software Project Management”, Andrew Stellman published by OReily, 2010

<http://www.stellman-greene.com>

WHO BUILDS SOFTWARE?



PROJECT MANAGEMENT

The project manager plans and guides the software project

The project manager is responsible for identifying the users and stakeholders and determining their needs

The project manager coordinates the team, ensuring that each task has an appropriate software engineer assigned and that each engineer has sufficient knowledge to perform it

To do this well, the project manager must be familiar with every aspect of software engineering

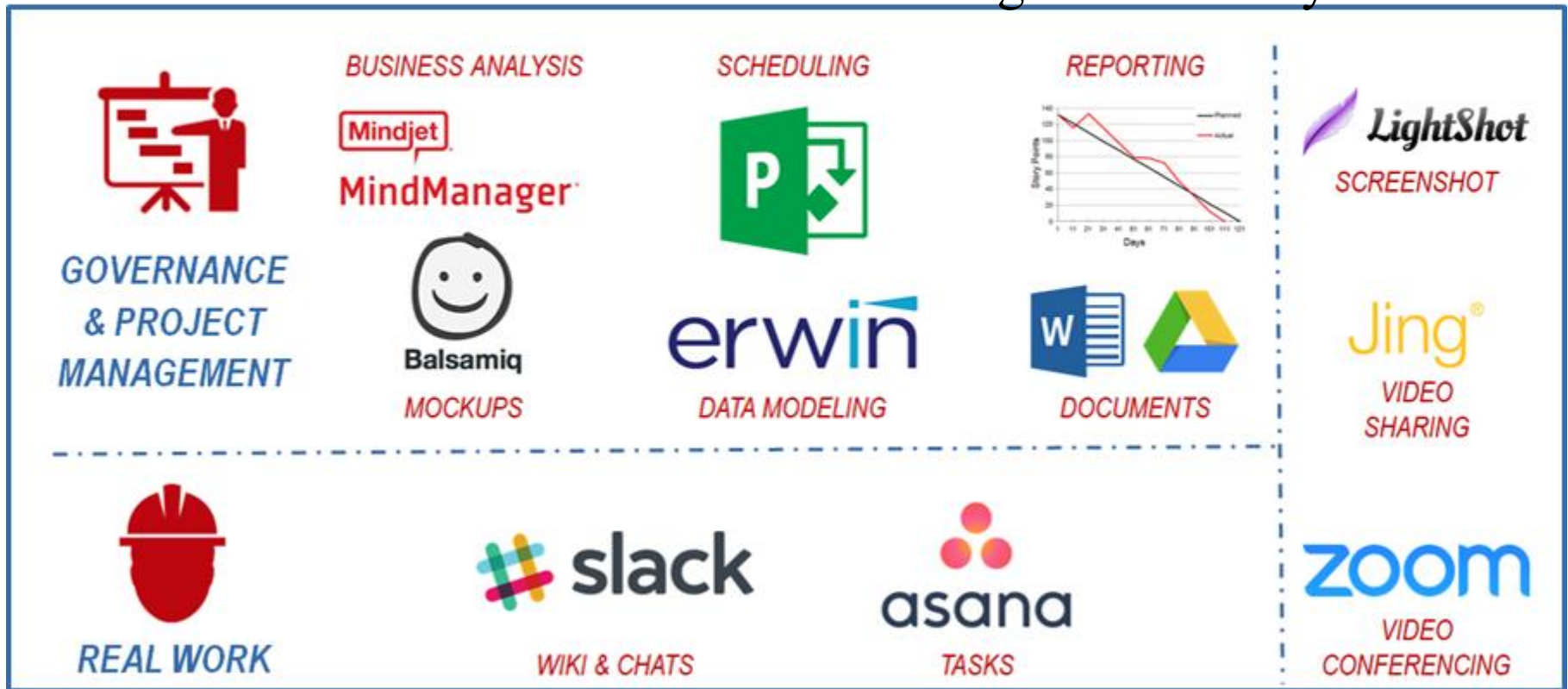
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“Applied Software Project Management”, Andrew Stellman published by OReily, 2010

<http://www.stellman-greene.com>

MANAGING A SOFTWARE PROJECT

Manager has a many duties....



Lecturer. Tuyatsetseg Badarch, PhD. Associate professor

<https://medium.com/@pmpeople/tools-to-manage-a-software-project-b94c5dce1170>

IDENTIFYING NEEDS

The project manager drives the scope of the project.

The project manager should identify and talk to the main stakeholder

**The effective way to show stakeholders that their needs are understood
and that those specific needs will be addressed is with a vision and
scope document**

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“Applied Software Project Management”, Andrew Stellman published by OReily, 2010

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Vision and scope document outline

1. Problem statement

- a. Project background - summary of problem to solve
- b. Stakeholders - name, title or role
- c. Users
- d. Risks - factors that could impact or delay project
- e. Assumptions - generated by Wideband Delphi est.?

2. Vision of the solution

- a. Vision statement - what the project is expected to accomplish
- b. List of features - software that provides services or capabilities, usually ~10 will be listed here
- c. Scope of phased release - used when software is released in phases
- d. Features that will not be developed

PROJECT PLAN

The project plan defines the work that will be done on the project and who will do it. It consists of:

A statement of work (SOW) that describes all work products that will be produced and a list of people who will perform that work

A resource list that contains a list of all resources that will be needed for the product and their availability

A work breakdown structure and a set of estimates

A project schedule

A risk plan that identifies any risks that might be encountered and indicates how those risks would be handled should they occur

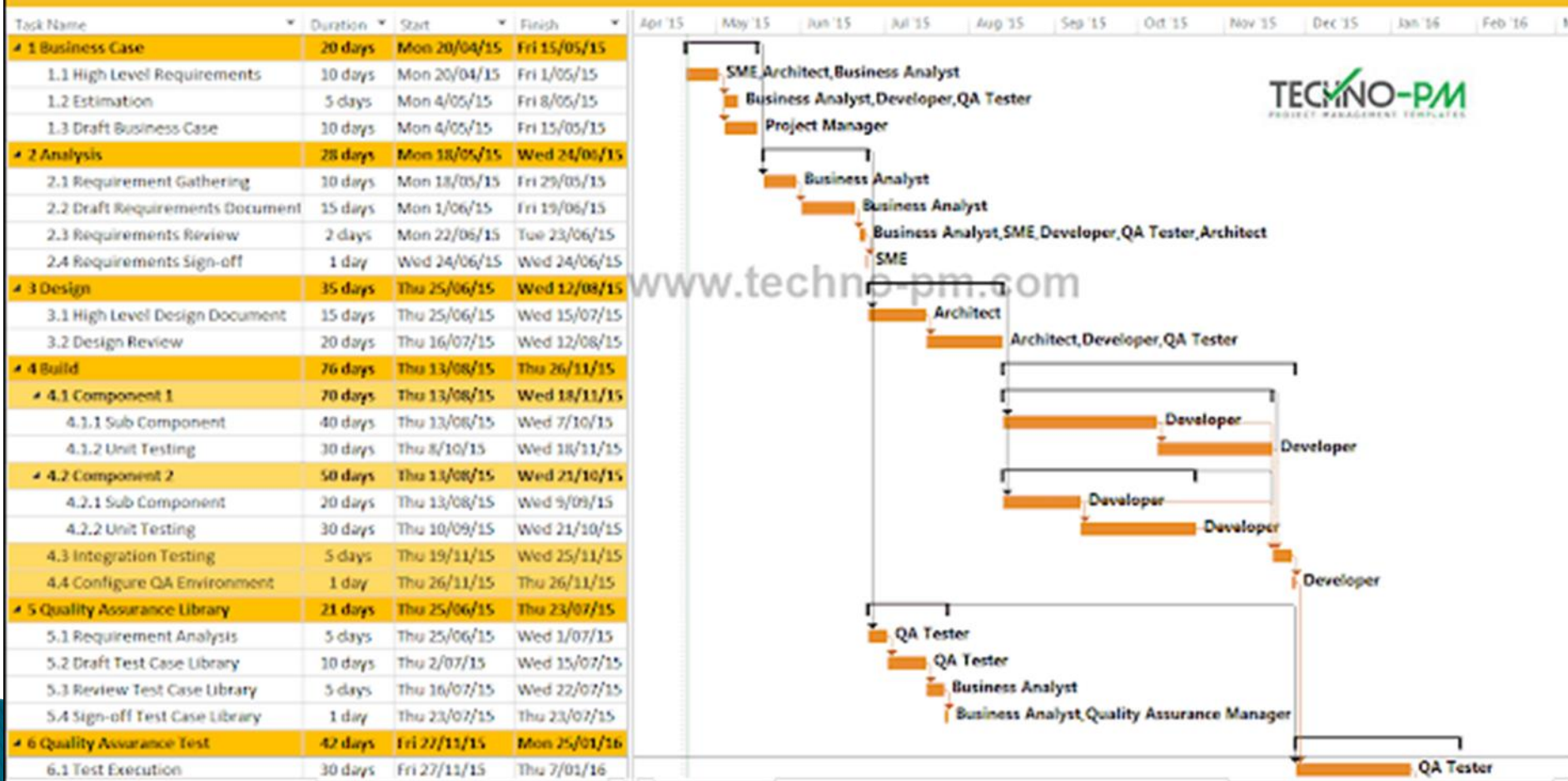
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<http://www.stellman-greene.com>

EXAMPLE OF PROJECT PLAN

Software Project Plan

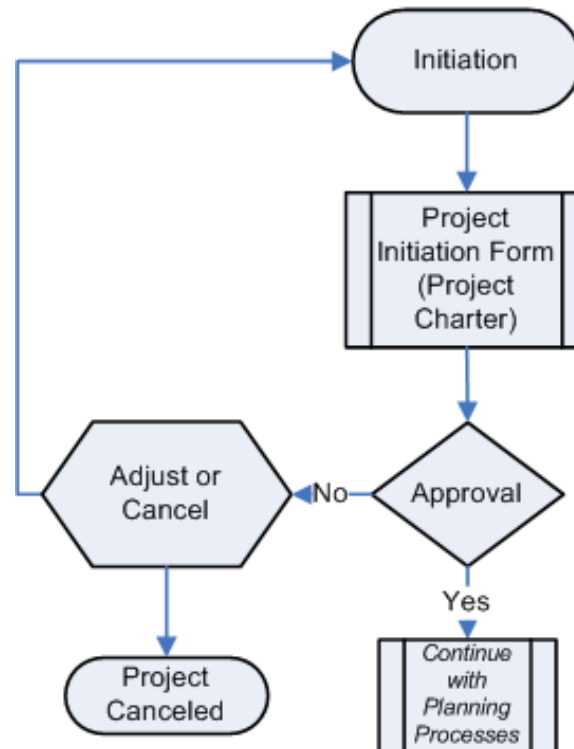


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<https://www.techno-pm.com/2015/04/project-plan-template-example-msproject.html>

Initiation Processes

Use these flowchart diagrams as a visual aid to help understand the project management methodology. The diagrams show parallel and interdependent processes, as well as project lifecycle relationships.



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<https://www.edrawsoft.com/project-management-flowchart.html>

Thank you.

Lecturer. Tuyatsetseg Badarch, PhD. Associate professor

<https://www.dreamstime.com/royalty-free-stock-photo-project-management-success-diagram-image23973505>