

إدارة مشاريع تقنية المعلومات
IT Project Management
ITGS303

Chapter # 3#
Conceptualizing and Initializing the IT Project

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Learning Objectives

1. التعرف على دورة حياة المشروع

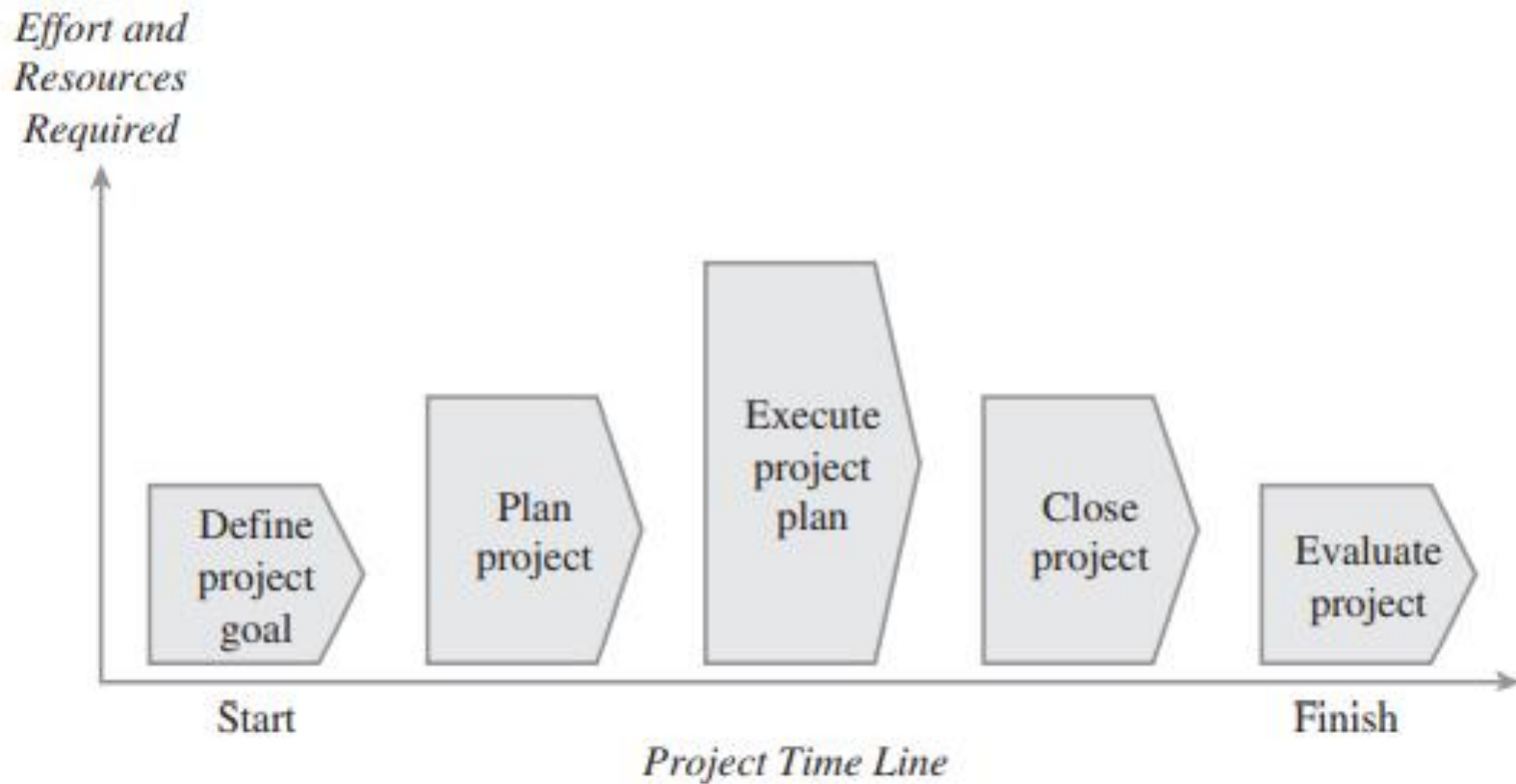
2. الفرق بين PLC and SDLC

3. مراحل ادارة المشروع

4. منهجيات تطوير الانظمة



THE PROJECT LIFE CYCLE (PLC) دورة حياة المشروع



First Define Project Goal

Defining project goal is the first step in project life cycle. The goal should focus on providing business value to the organization. A well defined goal gives the project team a clear focus and drives the other phases of the project. The project goal should also answer the question: How will we know if this project is successful given the time, money, and resources invested?

تعريف اهداف المشروع هي اول خطوة في المشروع و الذي يجب ان يركز على تحديد قيمة العائد من المشروع للمؤسسة . كما انه يساعد فرق العمل على فهم طبيعة المشروع و الغاية منه و كذلك يجيب على السؤال

Plan Project

Once the project's goal has been defined, developing the project plan is a much easier task. A plan essentially answers the following questions:

- What are we going to do?
- What are we not going to do?
- Why are we going to do it?
- How are we going to do it?
- Who is going to be involved?
- How long will it take?
- How much will it cost?
- What can go wrong and what can we do about it?
- How will we know if we are successful? In addition, the deliverables, tasks, resources, and time to complete each task must be defined for each phase of the project. The project plan defines the agreed upon scope, schedule, and budget and is used as a tool to gauge the project's performance throughout the life cycle.



Execute Project Plan

After the project's goal and plan have been defined, it's time to put the plan into action. As work on the project progresses, scope, schedule, budget, and people must be actively managed to ensure that the project achieves its goal. Progress must be documented and compared to the baseline plan. In addition, project performance must be communicated to all of the stakeholders. At the end of this phase, the team implements or delivers a completed product, service, or information system to the organization.

بعد تحديد اهداف المشروع ووضع الخطة المناسبة له و اثناء تنفيذ المشروع يجب التحقق بان كل الخطوات في مسار تحقيق الهدف ، ويجب توثيق كل الخطوات و الاجراءات لذلك ، ويجب التواصل مع جميع من له علاقة بالمشروع في نهاية هذه المرحلة

Close Project

A project should have a definite beginning and end. The closing phase ensures that all of the work is completed as planned and as agreed to by the team and the sponsor. Therefore, there should be some kind of formal acknowledgment by the sponsor that they will accept the product delivered. This closure is often capped with a final project report and presentation to the client that documents that all promised deliverables have been completed as specified.

جميع المشاريع لها بداية و نهاية ففي هذه المرحلة يتم فيها التحقق بان العمل في المشروع تم تنفيذه حسب الخطة المتفق عليها من قبل المستفيد وهذا يكون من خلال تسليم وثيقة موقعة من قبل المستفيد وعادة يكون مصحوب بتقرير موثق و موقع من جميع الاطراف المخولة لذلك.

Evaluate Project

Sometimes the value of an IT project is not readily known when the product, service, or information system is implemented. For example, the goal of a project to develop an electronic commerce site should be to make money—not to build or install hardware, software, and Web pages on a particular server platform. The technology and its subsequent implementation are only a means to an end. Therefore, the goal of the electronic commerce site may be to produce \$250,000 in revenue within six months. As a result, evaluating whether the project met its goal can be made only after the system has been implemented. However, the project can be evaluated in other ways as well. The project team should document its experiences in terms of lessons learned—those things that it would do the same and those things that it would do differently on the next project, based on its current project experiences.

The Systems Development Life Cycle (SDLC)

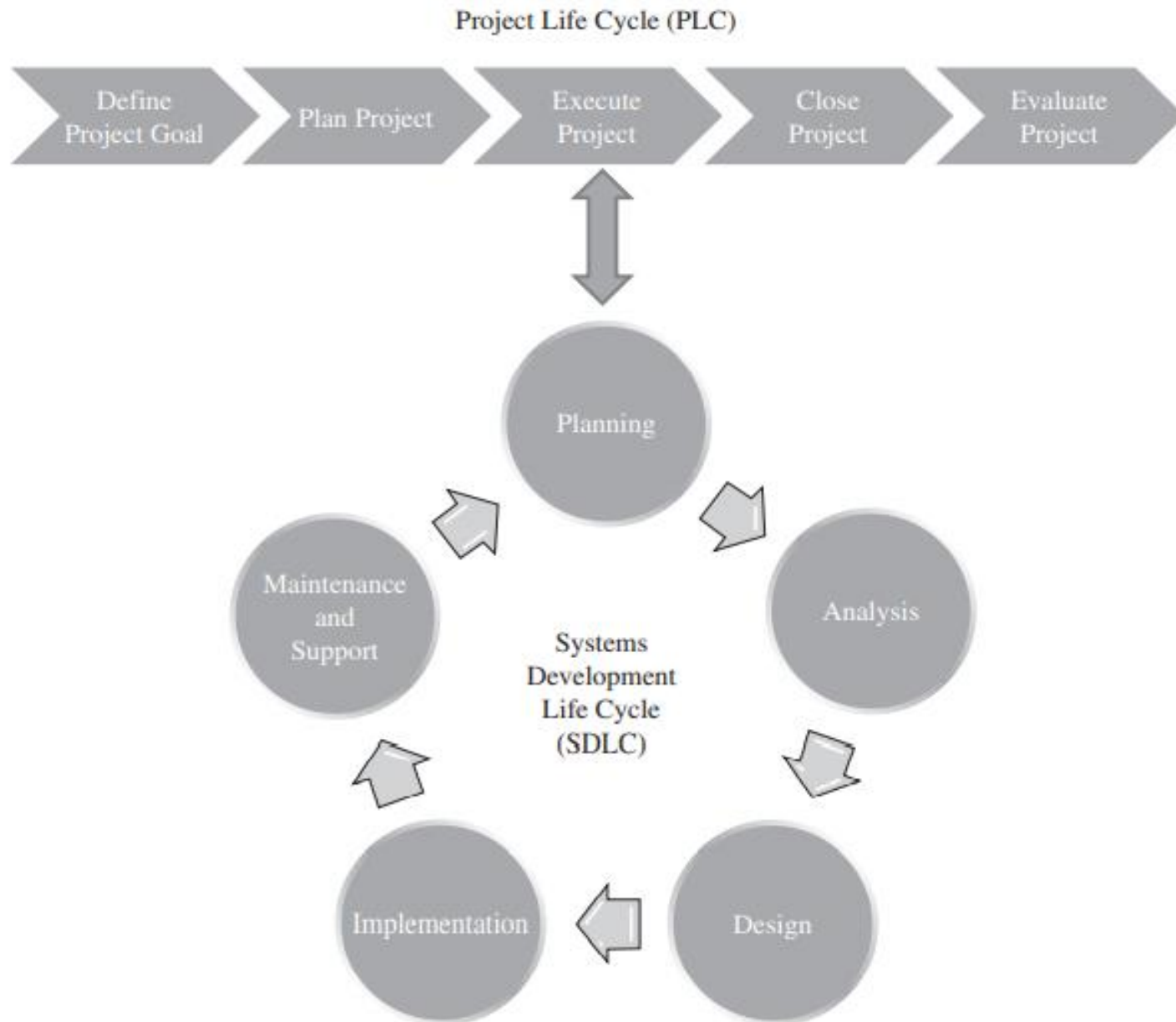
Although projects follow a project life cycle, the development of new products, services, or information systems follows a product life cycle. The most common product life cycle in IT is the systems development life cycle (SDLC), which represents the sequential phases or stages an information system follows throughout its useful life.



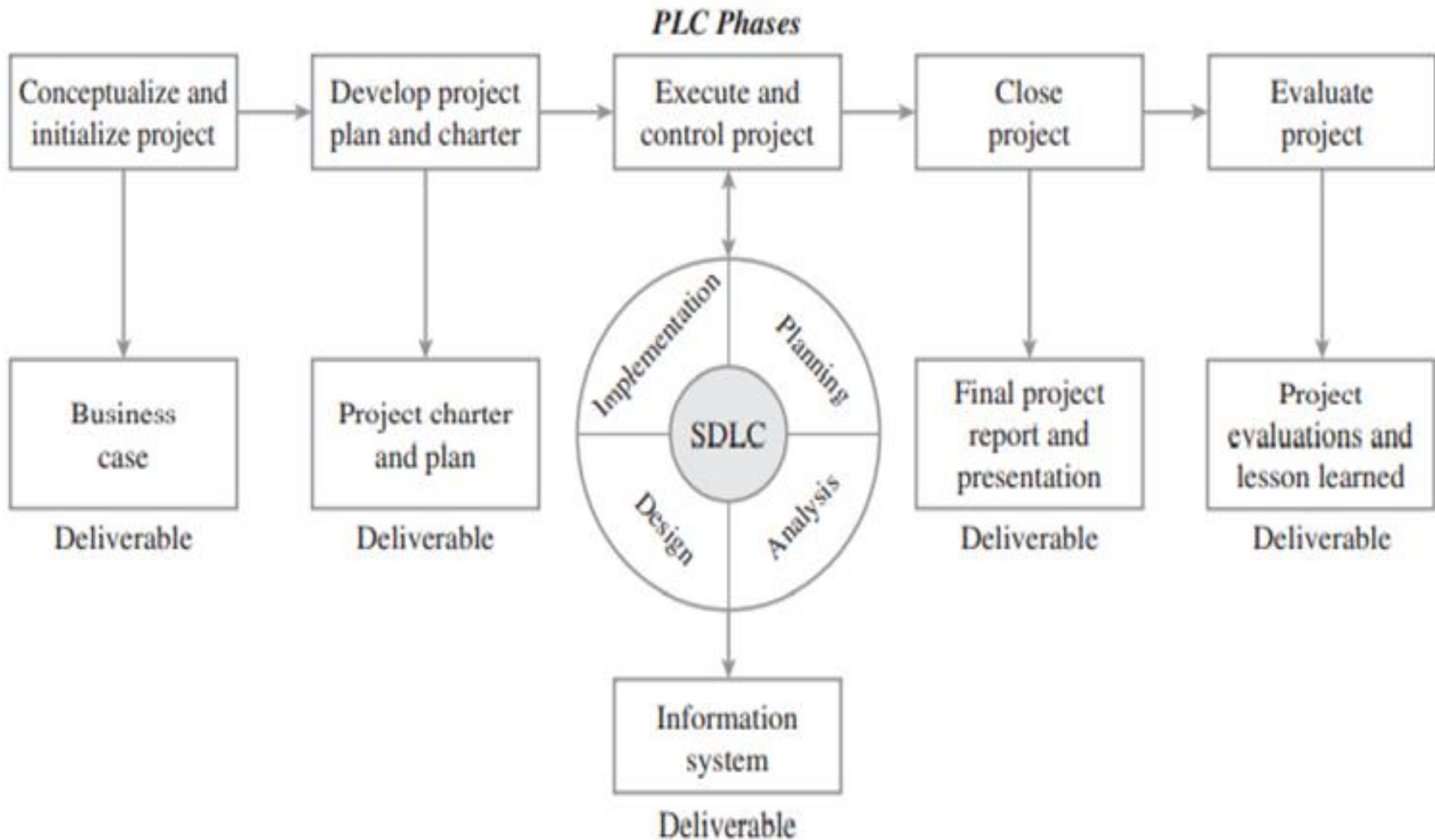
The PLC and The SDLC

- The project life cycle (PLC) focuses on the phases, processes, tools, knowledge, and skills for managing a project, while the system development life cycle (SDLC) focuses on creating and implementing the project's product—the information system.
- The SDLC is really part of the PLC because many of the development activities occur during the execution phase of the PLC. The last two phases of the PLC, close project and evaluate project, occur after the implementation of the information system. The integration of project management and systems development activities is one important component that distinguishes IT projects from other types of projects. A methodology will now be presented to illustrate how the project life cycle and systems development life cycle can be combined to plan and manage the processes and product of an IT project.

The PLC and The SDLC



An Information Technology Project Methodology



Phase 1: Conceptualize and Initialize

- The first stage of the IT project methodology focuses on defining the overall goal of the project. A project is undertaken for a specific purpose, and that purpose must be to add tangible value to the organization. Defining the project's goal is the most important step in the IT project methodology. Alternatives that would allow the organization to meet its goal must be identified. Then, the costs and benefits, as well as feasibility and risk, of each alternative must be analyzed. Based on these analyses, a specific alternative is recommended for funding. Finally, the project's goal and the analysis of alternatives that support the goal are summarized in a deliverable called the business case. Senior management will use the business case during the selection process to determine whether the proposed project should be funded



Phase 2: Develop the Project Charter and Detailed Project Plan

- The project charter and plan answer the following questions:
 - ■ Who is the project manager?
 - ■ Who is the project sponsor?
 - ■ Who is on the project team?
 - ■ What role does everyone associated with the project play?
 - ■ What is the scope of the project?
 - ■ How much will the project cost?
 - ■ How long will it take to complete the project?
 - ■ What resources and technology will be required?
 - ■ What approach, tools, and techniques will be used to develop the information system?
 - ■ What tasks or activities will be required to perform the project work?
 - ■ How long will these tasks or activities take?
 - ■ Who will be responsible for performing these tasks or activities?
 - ■ What will the organization receive for the time, money, and resources invested in this project?
- In addition, the project's scope, schedule, budget, and quality objectives are defined in detail.



Phase 3: Execute and Control The Project

- The third phase of the IT project methodology focuses on execution and control—carrying out the project plan to deliver the IT product and managing the project’s processes to achieve the project’s goal. The project manager must ensure that the environment and infrastructure to support the project includes:
 - ■ Acquisition of people with the appropriate skills, experience, and knowledge
 - ■ The technical infrastructure for development
 - ■ IS development methods and tools
 - ■ A proper work environment
 - ■ Scope, schedule, budget, and quality controls
 - ■ A detailed risk plan
 - ■ A quality management plan
 - ■ A change management plan
 - ■ A communications plan
 - ■ A testing plan
 - ■ An implementation plan
 - ■ A human resources system for evaluation and rewards



Phase 4: Close Project

- After the information system has been developed, tested, and installed, a formal acceptance should transfer control from the project team to the client or project sponsor. The project team should prepare a final project report and presentation to document and verify that all the project deliverables have been completed as defined in the project's scope. This gives the project sponsor confidence that the project has been completed and makes the formal approval and acceptance of the project go more smoothly. At this time, the final cost of the project can be determined. In addition, the project manager and team must follow a set of processes to formally close the project. These processes include such things as closing all project accounts, archiving all project documents and files, and releasing project resources.



Phase 5: Evaluate Project Success

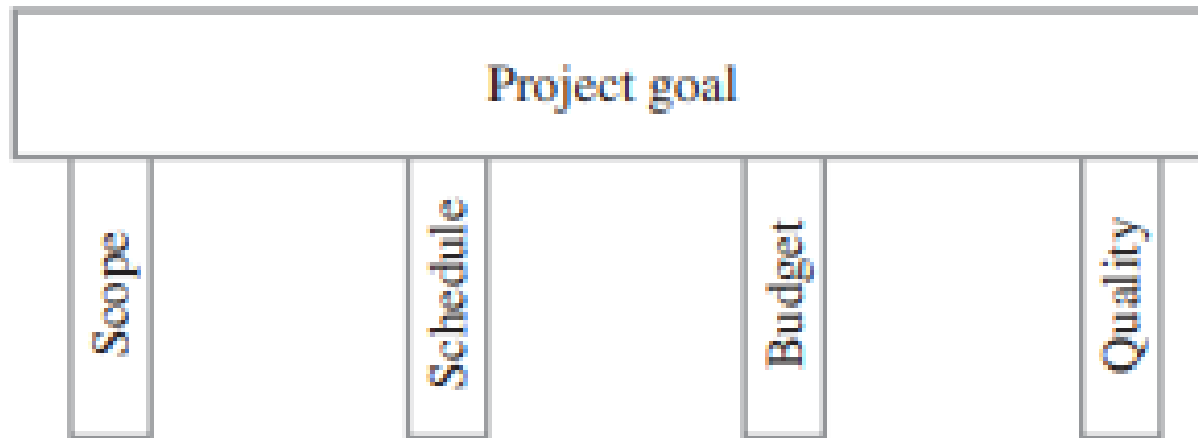
- The final phase of the methodology should focus on evaluating the following areas:
 1. First final project review, should be conducted by the project manager and team.
 2. Second type of evaluation should take place between the project manager and the individual project team members.
 3. The project must be evaluated in order to determine whether the project provided value to the organization. The goal of the project should be defined in the first phase of the project.

In general, the value an IT project brings to the organization may not be clear immediately after the project is implemented. Therefore, it may be weeks or even months before that value is known. However, time and resources should be allocated for determining whether the project met its intended goal or not.



Project Objectives

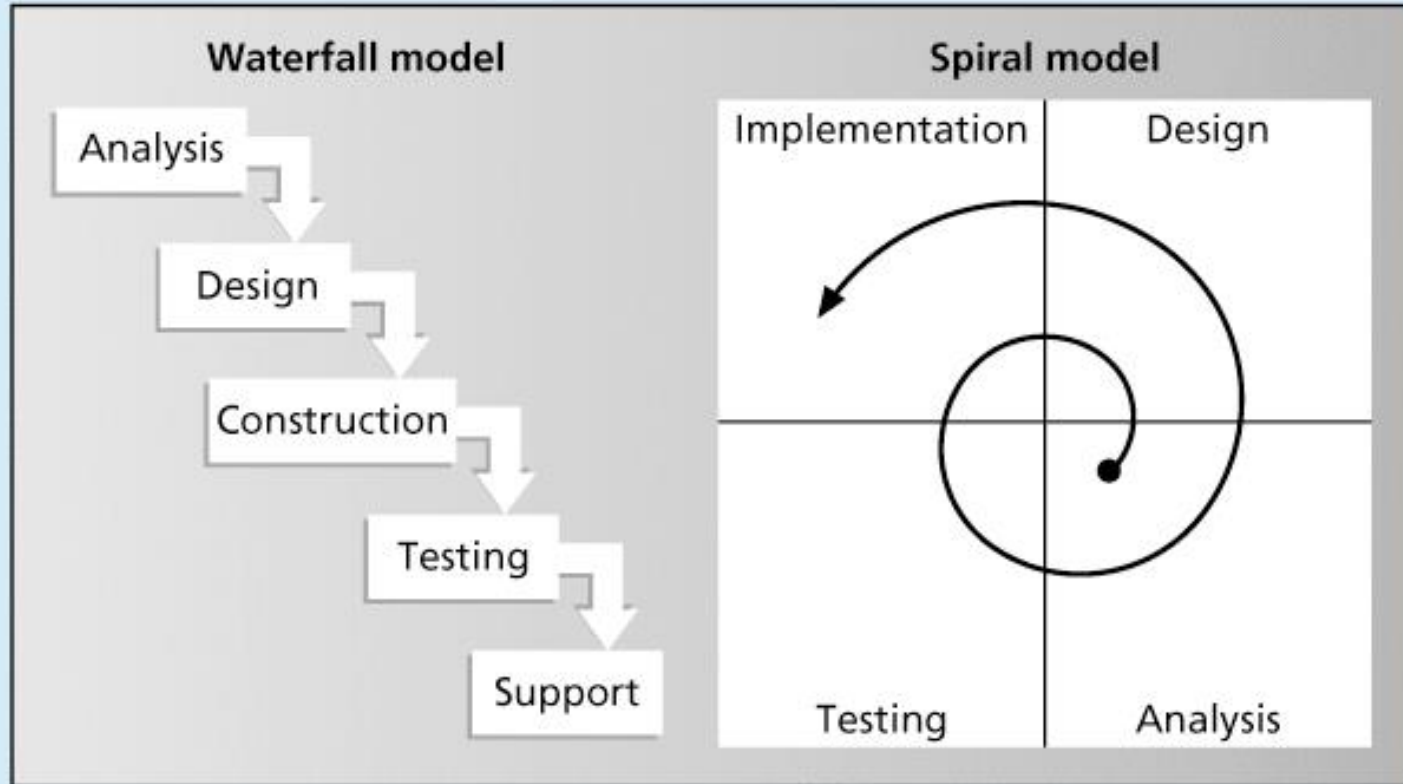
- In addition to an overall goal, a project will have several objectives. These objectives support the overall goal and may be defined in terms of the project's scope, schedule, budget, and quality standards. Separately, each of these objectives cannot define success; however, together they must support the project's goal.



Tools

- Tools support both the processes and product of the project. These project management tools include tools and techniques for estimation, as well as tools to develop and manage scope, schedule, budget, and quality. Similarly, tools support the development of the information system. For example, computer aided software engineering (CASE) tools and models support the analysis and design phases of development.

نموذج الشلال والنموذج الحلزوني



Agile Software Development

تطوير البرمجيات بطريقة الاجايل

- أصبح تطوير البرمجيات بطريقة الاجايل Agile (الرشيقة) شائعًا لوصف الأساليب الجديدة التي تركز على التعاون الوثيق بين فرق البرمجة وخبراء الأعمال.

أهمية مراحل المشروع ومراجعات الإدارة

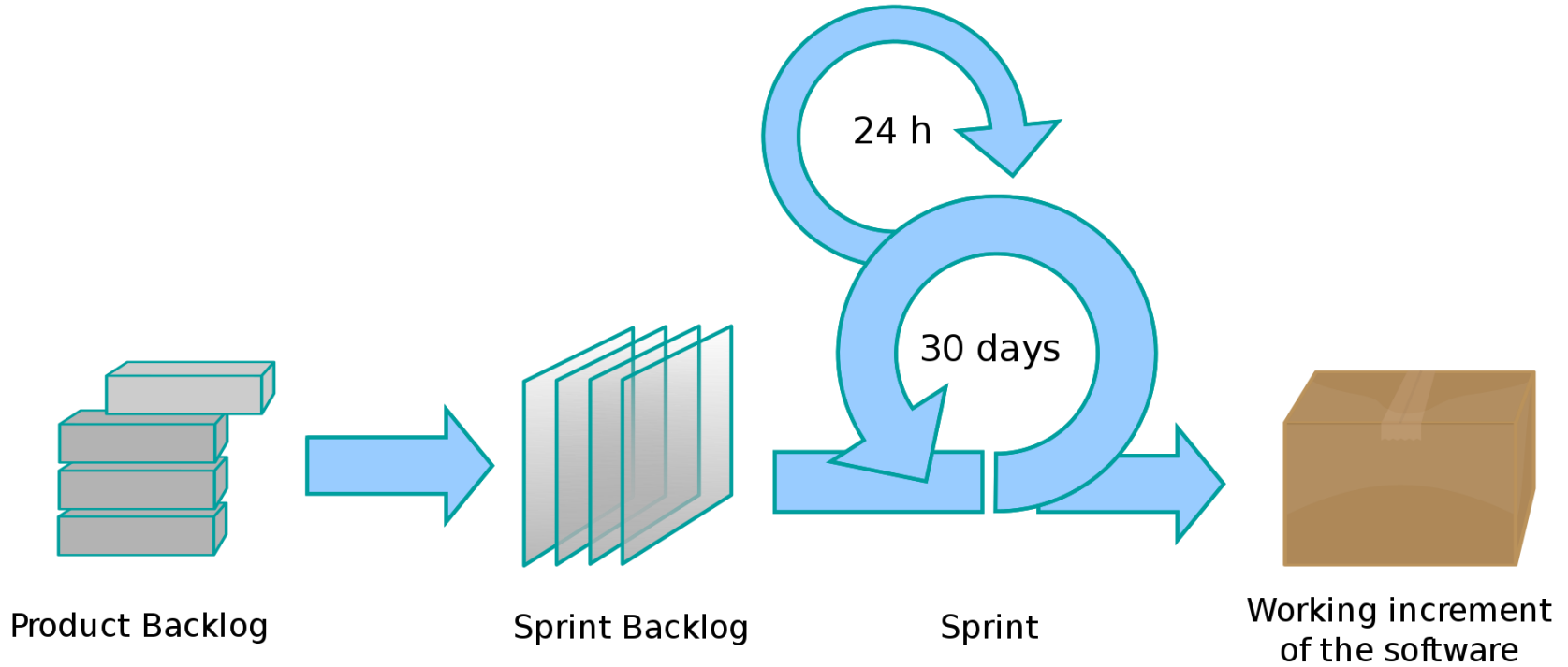
- يجب أن يمر المشروع بنجاح عبر كل مرحلة من مراحل المشروع من أجل المتابعة إلى المرحلة التالية.
- مراجعات الإدارة ، وتسمى أيضًا مخرجات المرحلة ، يجب أن تحدث بعد كل مرحلة لتقييم تقدم المشروع ، والنجاح المحتمل ، والتوافق المستمر مع أهداف المؤسسة.

ادارة المشاريع باستخدام الاجايل

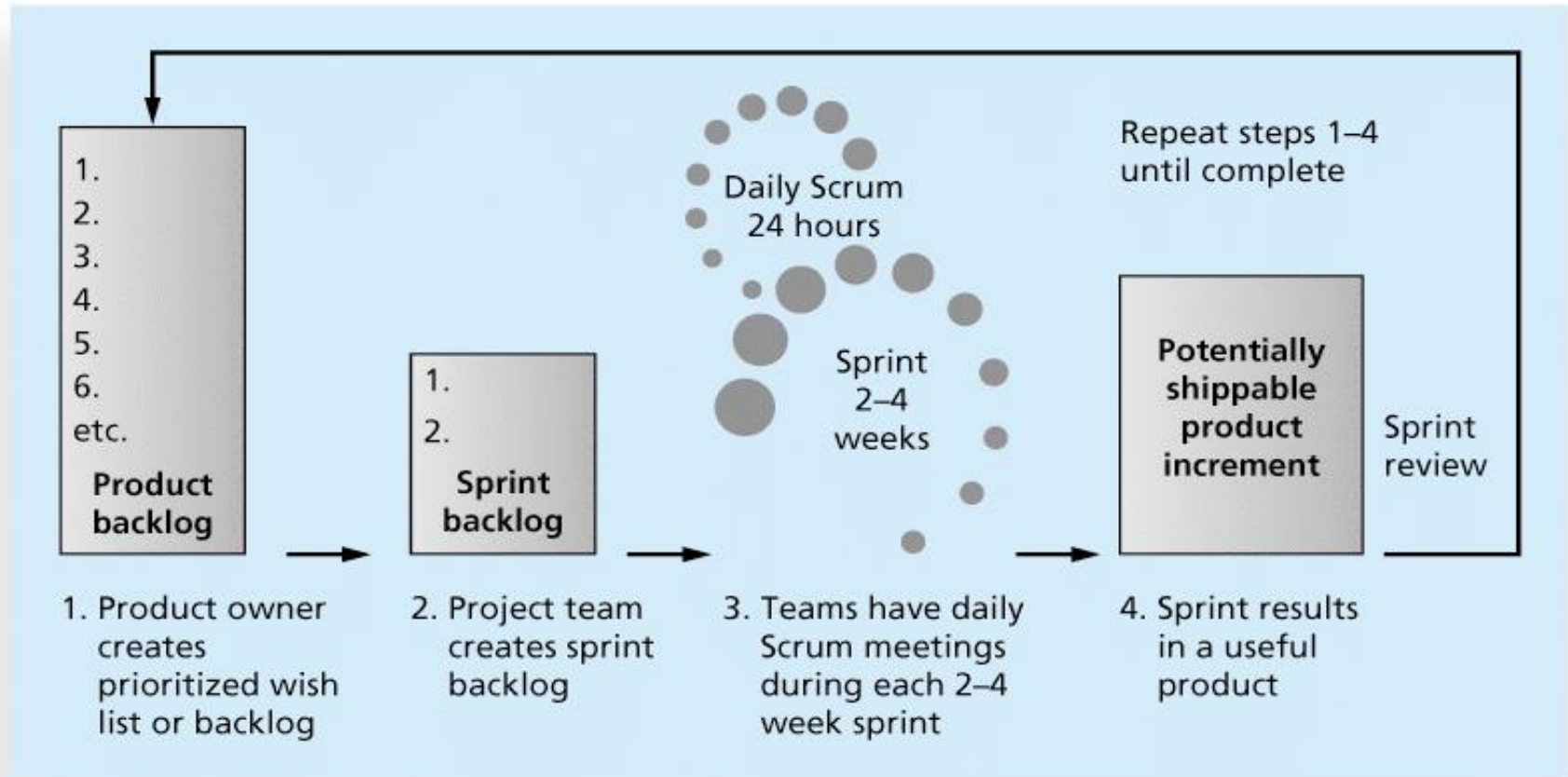
- نموذج الشلال من اكثر النماذج استخدما في تطوير مشاريع البرامج، ولكنه يصبح صعب الاستخدام اذا كانت المتطلبات غير محددة أو تتغير باستمرار.
- الاجايل تعني القدرة على التحرك بسرعة وسهولة (برشاقة).
- الاجايل تعتمد على التطوير التكراري والمتزايد ، حيث تتطور المتطلبات والحلول في نفس الوقت بطريقة تعاونية.
- للمزيد من المعلومات انظر www.pmtxts.com

السكرم Scrum

- سكرم (scrum) هو احد اهم أساليب منهجية الاجايل (Agile).
- السكرم يحقق نتائج اسرع عندما يكون نطاق عمل المشروع معقد ويحتاج لافكار مبتكرة.



Scrum Framework إطار عمل السكريم



كانبان Kanban

- كانبان في سياق تطوير البرمجيات توفر نظامًا بصرياً بسيطاً لتطوير وإدارة العمليات يبيّن ما الذي ينبغي إنتاجه ومتى ينبغي ذلك وكيفية الإنتاج
- استوحى هذا من نظام إنتاج شركة تويوتا باستخدام عمليات التصنيع الرشيق (Agile).
- يُظهر لوح كانبان العمل الجديد (ToDo Work)، والعمل الجاري (Doing Work)، والعمل المكتمل (Done Work)

لوحة كانبان Kanban Board

- لوحة كانبان (كانبان باللغة اليابانية تعني لوحة الاعلانات) وهو إحدى الأدوات المستخدمة في إدارة المشاريع الرشيقة Agile.
- يستخدم لوحة كانبان بشكل بسيط جدًا لكي يمكنك من تحسين أي عملية (Process) تقوم بها عن طريق تمثيلها بصريًا، وبالتالي فهمها بشكل أكبر وإدارتها بشكل أفضل.
- تقسم المهام على لوحة كانبان إلى ثلاث فئات:



- المهام التي نريد انجازها (ToDo)
- المهام تحت الانجاز (Doing)
- المهام المنجزة (Done)
- يتم سحب المهام من اليسار لليمين

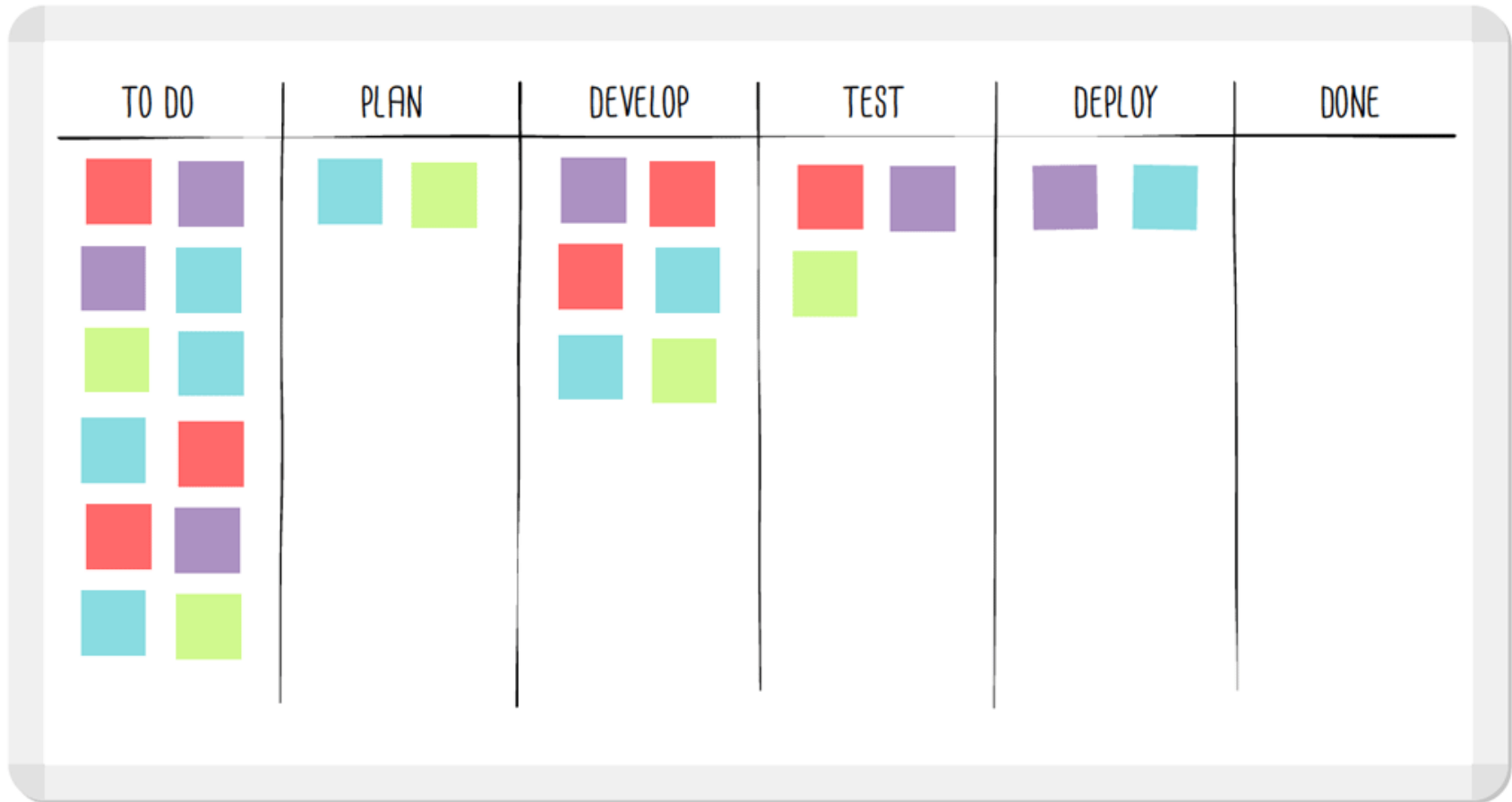
Kanban Board Example

مثال لاستخدام لوح كانبان

- عملية إنتاج البرمجيات تمر بالمراحل الآتية: تخطيط - تطوير - اختبار - تطبيق - تسليم.
- يمكن أن نوضح ذلك على لوح كانبان بشكل بسيط جداً باستخدام بطاقات لاصقة ملونة تمثل نوع العمل الذي يقوم به الفريق.
- فمثلاً اللون الأحمر هو ميزة يطلبها العميل نريد إنجازها، واللون الأخضر هو عيب برمجي نريد إصلاحه، واللون الأزرق الفاتح هو مهمة يتم إسنادها لأحد الأعضاء، واللون البنفسجي هو القصة التي نريد أن نحققها للمستخدم. user story.
- أهم ميزة في هذه الطريقة، أنها لا تقترح عليك تعديل عملياتك، بل تقول لك مثلها بصرياً عن طريق هذا اللوح لكي تفهمها جيداً.

Kanban Board Example

مثال لاستخدام لوح كانبان



User Story



Defect


































Task



Feature

مثال لوح كانبان Kanban Board

	To-do	Do today	In progress 5 / 6	Done ⓘ
General	<p>  Advertise our new product ☰</p> <p>  Produce financial report for Q2 ☰</p>	<p>  Strategy meeting with HQ ☰</p> <p>  Create a page on Google+ ☰</p>	<p>  Create Facebook page</p> <p>  Review security guidelines</p>	<p>Today</p> <p> Meeting with Acme</p>
Team NY	<p> Measure load performance of the main site ☰</p> <p> Load database with customer data</p>	<p> Develop an Iphone app</p> <p> Book SEO training for all editors</p> <p> Company website is down</p>	<p> Investigate competitors ☰</p> <ul style="list-style-type: none"> <input type="checkbox"/> Acme Inc. <input type="checkbox"/> Ztartupp Group 	<p>Today</p> <p> Create newsletter template</p> <p> Pay overdue invoices</p>
Team LA	<p> Prepare presentation about our new product line</p> <p> Develop an Android app ☰</p> <p> Document the service API</p>	<p>  Schedule & prepare database maintenance ☰</p> <p> Correct spelling errors in our product manual</p> <p> Allow user to change picture</p>	<p> Write blog entry for our new product</p> <p> Create a forum for our customers ☰</p>	<p>Today</p> <p> Implement CRM integration ☰</p>

المبادئ الأساسية لطريقة كانبان:

- الهدف الأساسي من نظام كانبان هو توزيع الموارد بكفاءة، عن طريق التعامل مع نظام كانبان كنظام سحب (Pull) من اليسار إلى اليمين، أي أننا عندما ننتهي من إنجاز مهمة ما ننقلها إلى المرحلة التالية.
- العمل قيد الإنجاز ليس له قيمة حتى ينجز تمامًا وبالتالي يجب الحد منه، وعلى لوح كانبان.
- يجب أن نضع حدًا أقصى لعدد المهام في كل مرحلة، لضمان زيادة عدد المهام التي تصل إلى النهاية (Throughput)، مثلًا يجب ألا نسمح بزيادة عدد المهام في مرحلة التطوير عن 5، فإذا حصل ذلك، يترك الفريق الأعمال في المراحل الأخرى لإنهاء الأعمال العالقة في التطوير.
- تذكر دائمًا القاعدة الإدارية التي تقول (multitasking is bad tasking) أي اسناد أكثر من مهمة إلى شخص واحد يضعف من كفاءته

The PMI - a new Agile Certification

- الاجايل هي منهجية تصف كيفية إدارة المشاريع.
- أقر معهد إدارة المشاريع (PMI) بالاهتمام المتزايد بال Agile، وقدم شهادة جديدة في عام 2011 تسمى Agile Certified Practitioner (ACP).

THANK YOU

Any Question?

