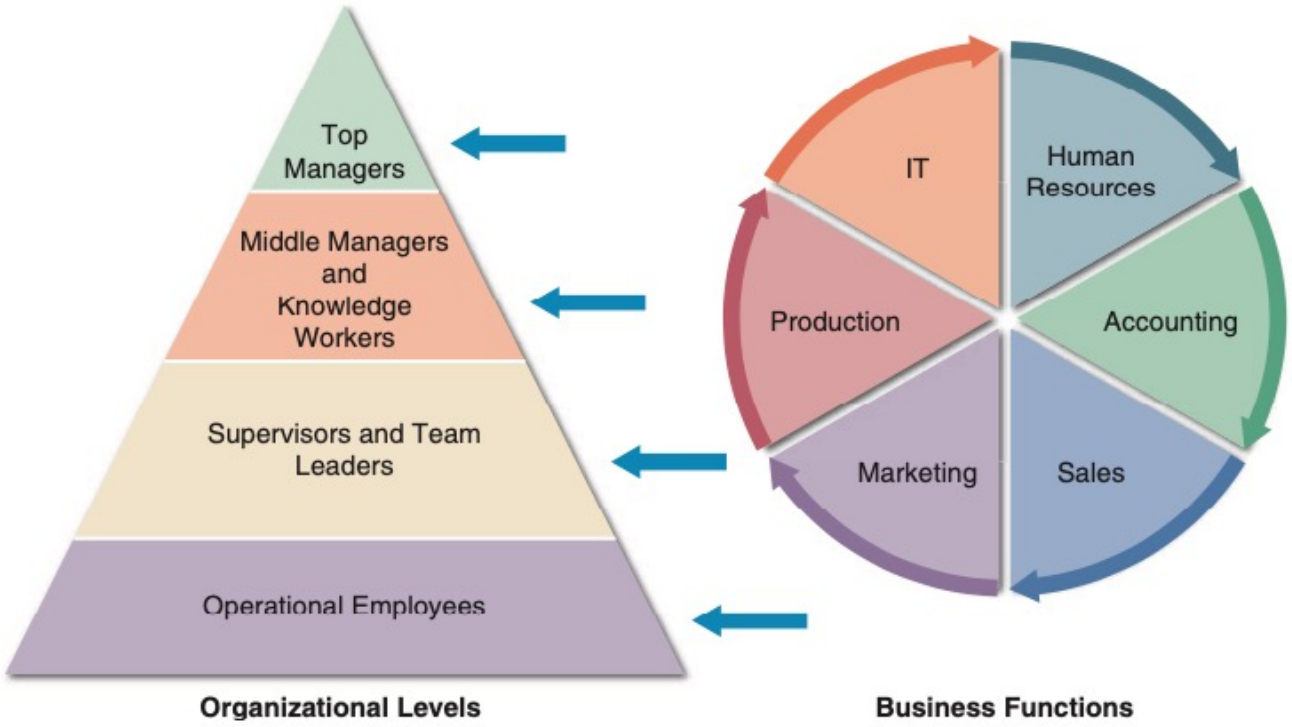
What information do users need?



A systems analyst **must understand** the company's organizational model to recognize who is responsible for specific processes and decisions and to be aware of what information is required by whom.

What information do users need?

Top Managers

Top managers **develop long-range plans, called strategic plans**, which define the company's overall mission and goals.

To plot a future course, top managers ask questions such as:

- How much should the company invest in information technology?
- How much will Internet sales grow in the next five years?
- Should the company build new factories or contract out production functions?

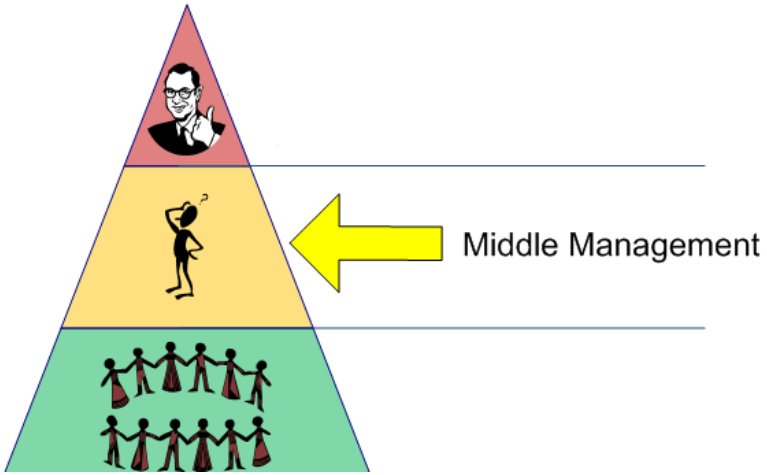
To develop a strategic plan, top managers also need information from outside the company, such as economic forecasts, technology trends, competitive threats, and governmental issues

What information do users need?

Middle Managers and Knowledge Workers

Middle managers **provide direction**, necessary resources, and performance feedback to supervisors and team leaders.

Because they focus on a somewhat shorter time frame, middle managers need more detailed information than top managers, but somewhat less than supervisors who oversee day-to-day operations



Knowledge workers include systems analysts, programmers, accountants, researchers, trainers, human resource specialists, and other professionals. Knowledge workers also use business support systems, knowledge management systems, and user productivity systems.

What information do users need?

Supervisors and Team leaders

Supervisors, often called team leaders, oversee operational employees and carry out day-to-day functions. They coordinate operational tasks and people, make necessary decisions, and ensure that the right tools, materials, and training are available.

Like other managers, supervisors and team leaders need decision support information, knowledge management systems, and user productivity systems to carry out their responsibilities.

What information do users need?

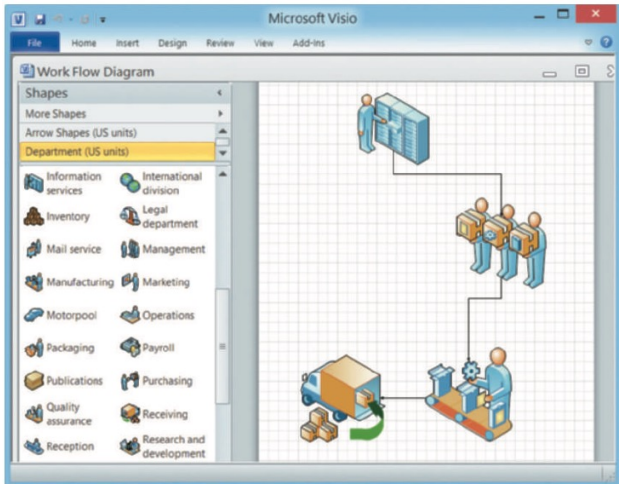
Operational Employees

Operational employees include users who rely on transaction processing systems to enter and receive data they need to perform their jobs

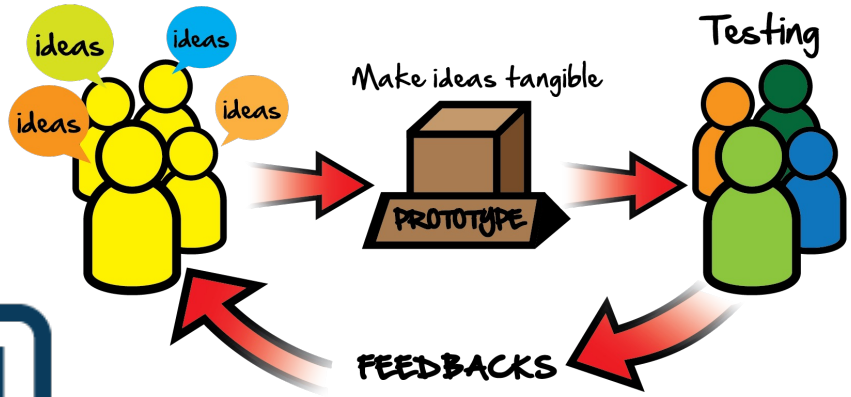
In many companies, operational users also need information to handle tasks and make decisions that were assigned previously to supervisors. This trend, called empowerment, gives employees more responsibility and accountability. Many companies find that empowerment improves employee motivation and increases customer satisfaction.

What information do users need?

System Development Tools



Modeling

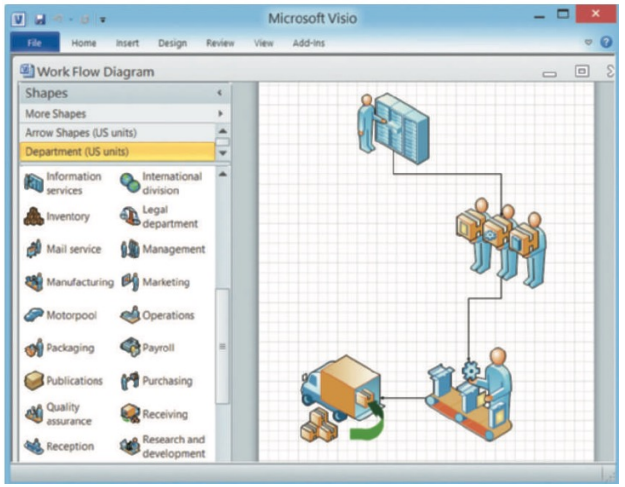


Prototyping

Computer-Aided Systems Engineering (CASE) tools

Modeling

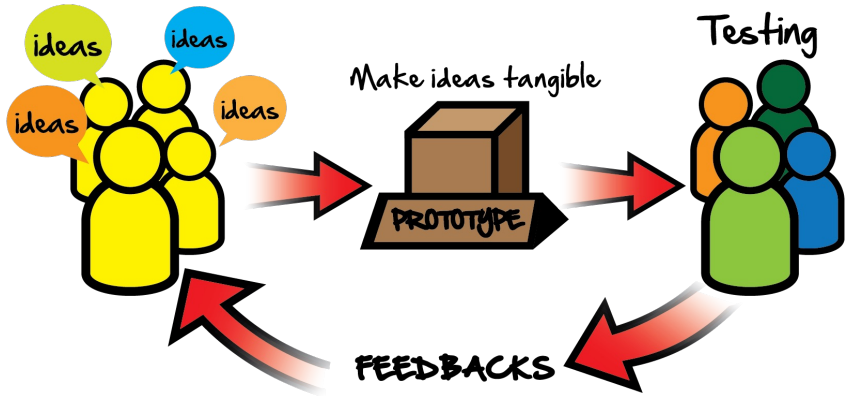
Modeling produces a **graphical representation** of a concept or process that systems developers can analyze, test, and modify. A systems analyst can describe and simplify an information system by using a set of business, data, object, network, and process models.



A business model describes the information that a system must provide. Analysts also create models to represent data, objects, networks, and other system components. Although the models might appear to overlap, they actually work together to describe the same environment from different points of view.

Prototyping

Tests system concepts and provides an opportunity to examine input, output, and user interfaces before final decisions are made. A prototype is an early working version of an information system.



A prototype can serve as an initial model that is used as a benchmark to evaluate the finished system, or the prototype itself can develop into the final version of the system. Either way, prototyping speeds up the development process significantly.

Computer-Aided Systems Engineering (CASE) tools

Computer-aided systems engineering (CASE), also called computer-aided software engineering, is a technique that uses powerful software, called CASE tool, to help systems analysts develop and maintain information systems.

Because CASE tools make it easier to build an information system, they boost IT productivity and improve the quality of the finished product.

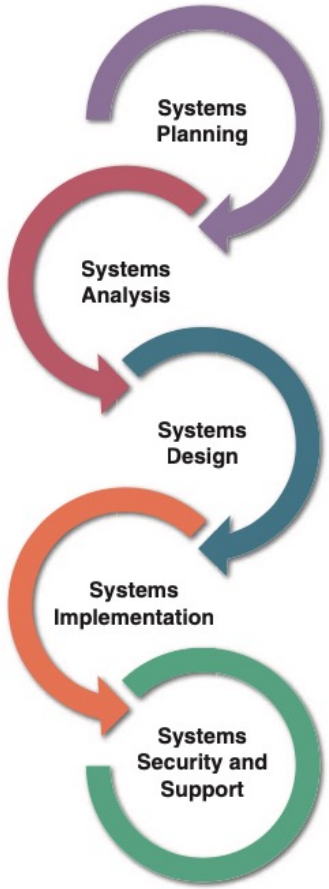
After developing a model, many CASE tools can generate program code, which speeds the implementation process.

System Development Methods

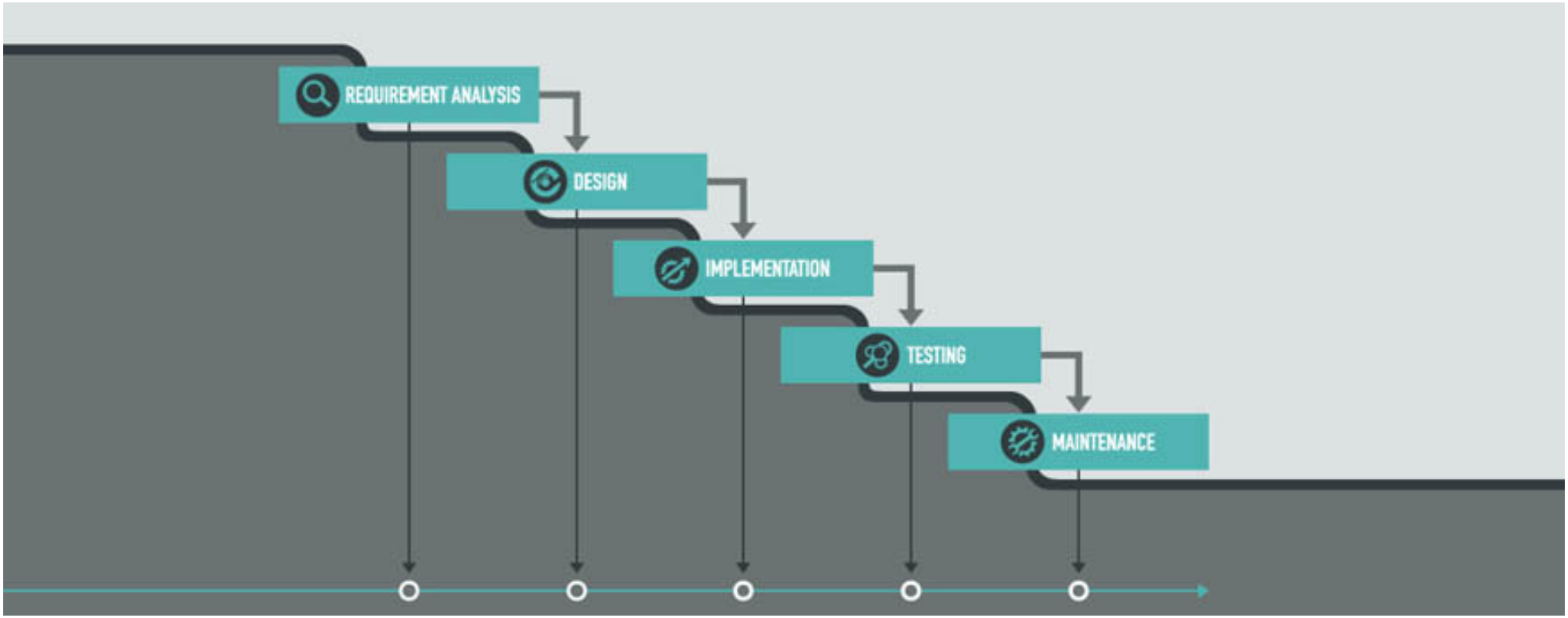
	STRUCTURED ANALYSIS	OBJECT-ORIENTED ANALYSIS	AGILE METHODS
Description	Represents the system in terms of data and the processes that act upon that data. System development is organized into phases, with deliverables and milestones to measure progress. The waterfall model typically consists of five phases: requirements, design, construction, testing, and maintenance & evolution. Iteration is possible among the phases.	Views the system in terms of objects that combine data and processes. The objects represent actual people, things, transactions, and events. Compared to structural analysis, O-O phases tend to be more interactive. Can use the waterfall model or a model that stresses greater iteration.	Stresses intense team-based effort. Breaks development into cycles, or iterations, that add functionality. Each cycle is designed, built, and tested in an ongoing process. Attempts to reduce major risks by incremental steps in short time intervals.

Structured Analysis

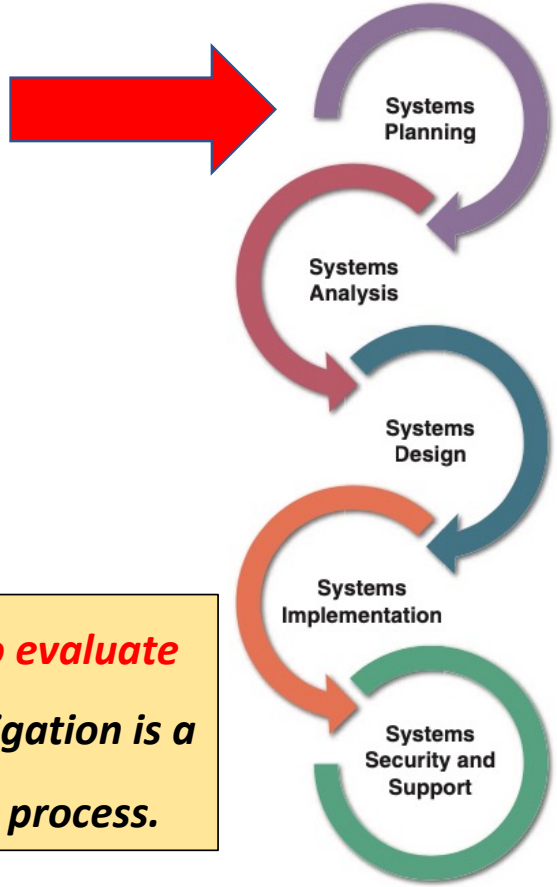
Structured analysis is a traditional systems development technique that is time-tested and easy to understand. Structured analysis uses a series of phases, called the systems development life cycle (SDLC), to **plan, analyze, design, implement, and support** an information system.



Structured Analysis (Waterfall)



Structured Analysis -> Planning Phase



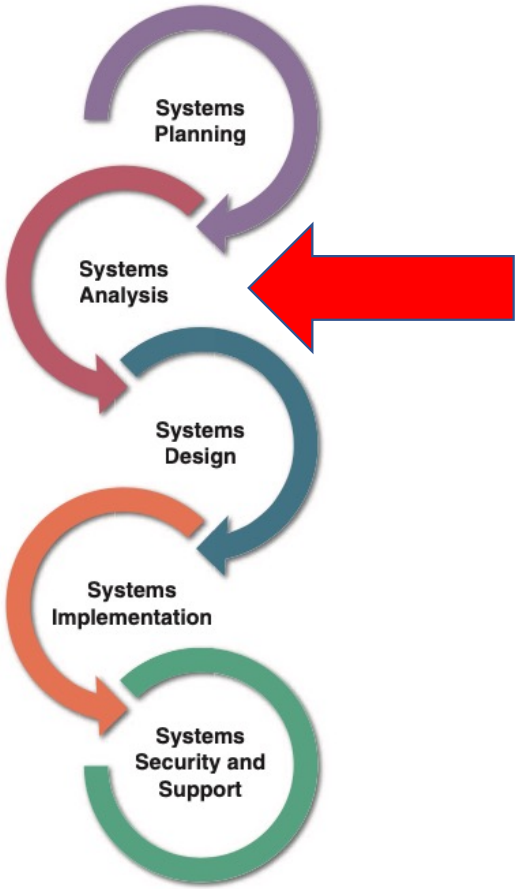
The systems planning phase usually begins with a formal request to the IT department, called a systems request, which describes problems or desired changes in an information system or a business process. In many companies, IT systems planning is an integral part of overall business planning

The purpose of this phase is to perform a preliminary investigation to evaluate an IT-related business opportunity or problem. The preliminary investigation is a critical step because the outcome will affect the entire development process.

Structured Analysis -> System Analysis

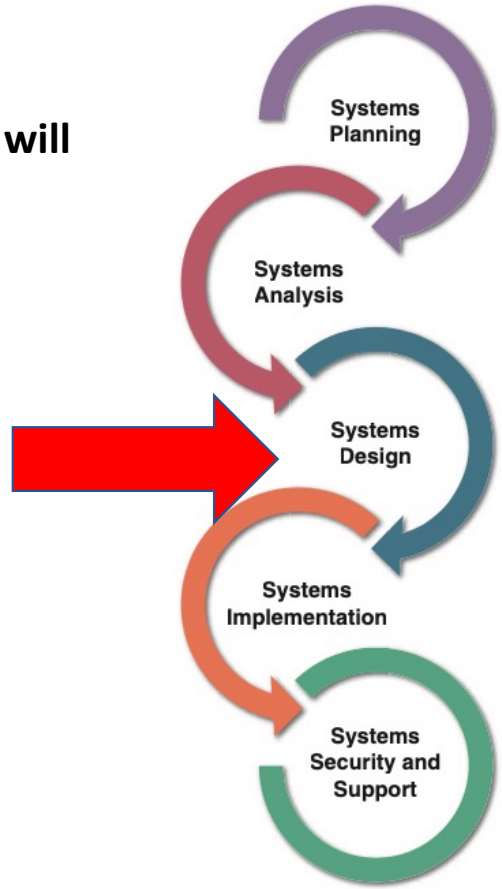
The purpose of the systems analysis phase is to **build a logical model of the new system**. The first step is requirements modeling, where the analyst investigates business processes and documents what the new system must do to satisfy users. Requirements modeling continues the investigation that began during the systems planning phase.

To understand the system, fact-finding using techniques such as interviews, surveys, document review, observation, and sampling is performed. The fact-finding results are used to build business models, data and process models, and object models.



Structured Analysis -> System Design

The purpose of the systems design phase is to **create a physical model that will satisfy all documented requirements for the system**. At this stage, the user interface is designed and necessary outputs, inputs, and processes are identified.

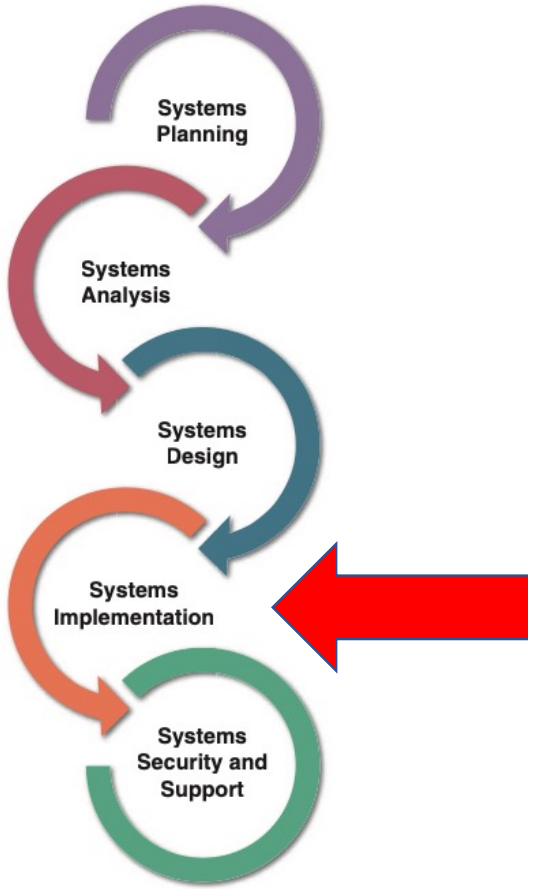


In addition, internal and external controls are designed, including computer-based and manual features to guarantee that the system will be reliable, accurate, maintainable, and secure.

Structured Analysis -> System Implementation

During the systems implementation phase, the new system is constructed.

The objective of the systems implementation phase is to deliver a completely functioning and documented information system. At the conclusion of this phase, the system is ready for use. Final preparations include converting data to the new system's files, training users, and performing the actual transition to the new system.

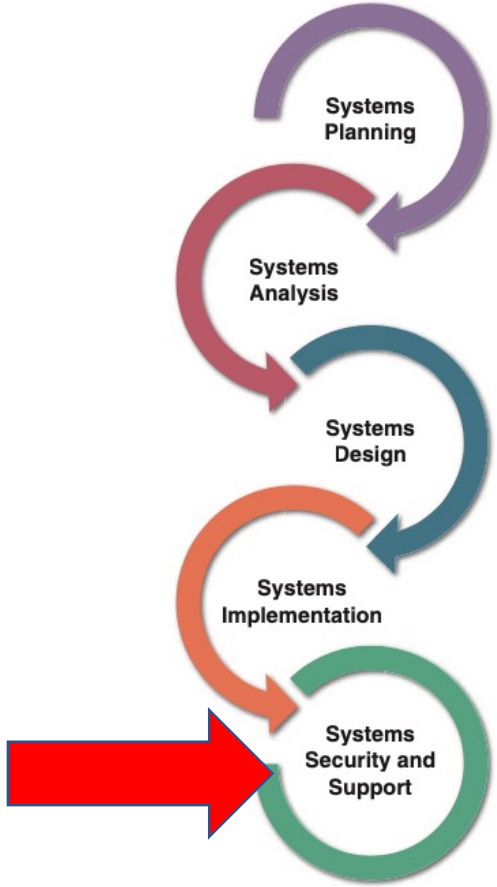


Structured Analysis -> System Support

During the systems support and security phase, the IT staff maintains, enhances, and protects the system. Maintenance changes correct errors and adapt to changes in the environment, such as new tax rates.

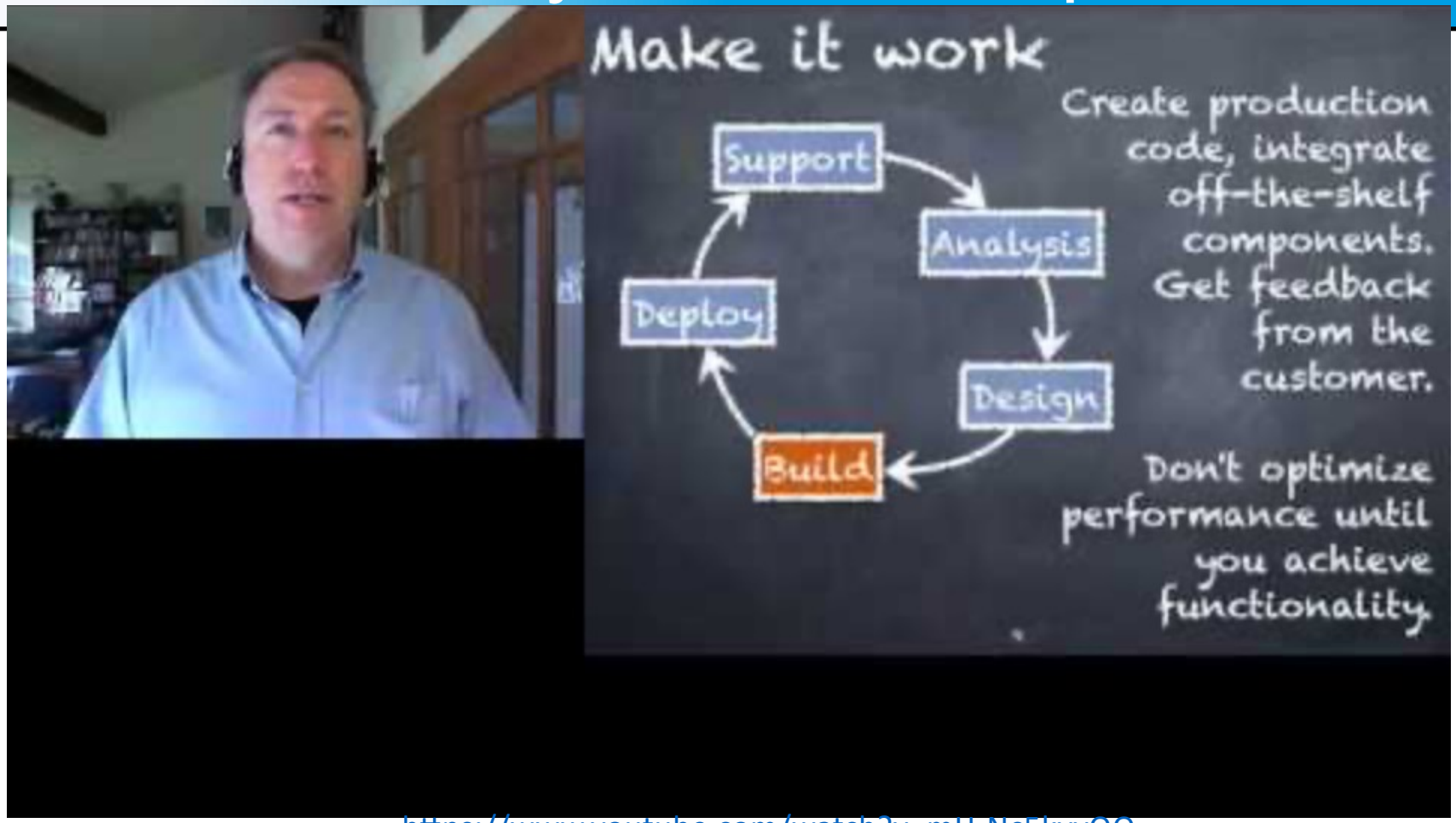
Information systems development is always a work in progress.

Business processes change rapidly, and most information systems need to be updated significantly or replaced after several years of operation.



System Development Methods

SDLC



https://www.youtube.com/watch?v=mH-Nc5kvyQQ