System Analysis & Design

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Content

- Integrating Technologies for Systems
- Advantages of Using the Web
- Stakeholders
- Need for Systems Analysis and Design
- Roles of the Systems Analyst
- Qualities of the Systems Analyst
- Skills Needed by the Systems Analyst

Information systems

Information systems fall into one of the following eight categories:

1. **Transaction processing systems (TPS).**
2. **Office automation systems (OAS).**
3. **Knowledge work systems (KWS).**
4. **Management information systems (MIS).**
5. **Decision support systems (DSS).**
6. **Expert systems (ES) and Artificial Intelligence (AI).**
7. **Group decision support systems (GDSS) and Computer-Supported Collaborative Work Systems.**
8. **Executive support systems (ESS).**

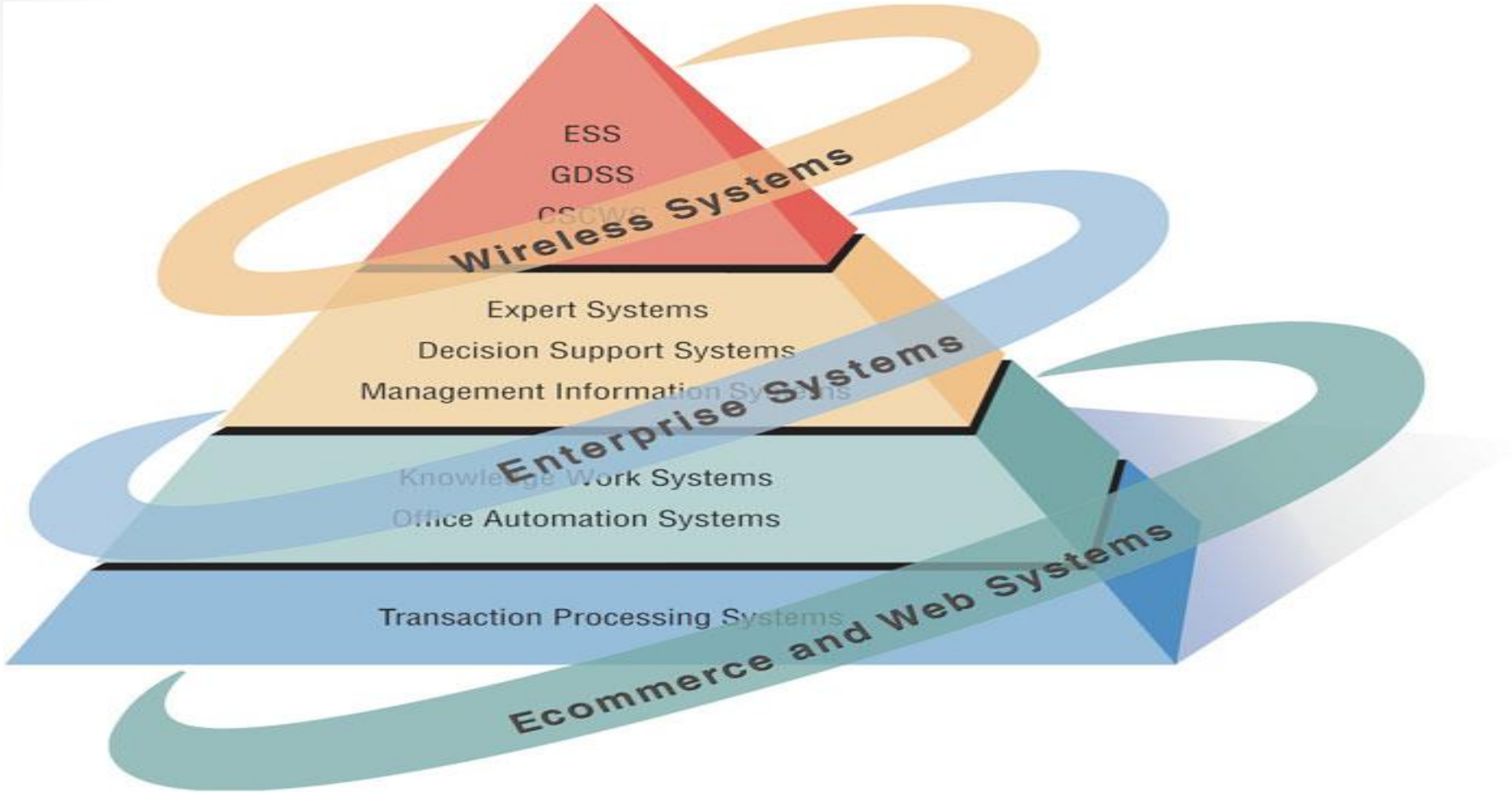
Integrating Technologies for Systems

- E-commerce uses the Web to perform business activities.
- Enterprise Resource Planning (ERP) has the goal of integrating many different information systems within the corporation.
- Wireless and handheld devices, including mobile commerce (m-commerce).

Advantages of Using the Web

The benefits of using the Web are:

- Increasing awareness of the availability of the service, product, industry, person, or group.
- 24-hour access for users.
- Standard interface design.
- Creating a global system, thus reaching people in remote locations without worry of the time zone in which they are located.



- **Systems analysts need to be aware that integrating technologies affect all types of users and systems.**

Stakeholders: Players in the Systems Game

- A stakeholder is any person who has an interest in an existing or proposed information system.
- Stakeholders can be technical or nontechnical workers. They may also include both internal and external workers.
- Information workers are those workers whose jobs involve the creation, collection, processing, distribution, and use of information.
- Knowledge workers are a subset of information workers whose responsibilities are based on a specialized body of knowledge.

Stakeholders

- **System owners** (an information system's sponsor) usually responsible for **funding** the project of developing, operating, and maintaining the information system.

- **System users** (who will use or is affected by an information system on a regular basis) capturing, validating, entering, responding to, storing, and exchanging data and information.

Internal & External System Users

- **Internal System Users**
  - Office and service workers
  - Technical and professional staff
  - Supervisors, middle managers, and executive managers
- **External System Users**
  - Customers
  - Suppliers
  - Partners

Systems Analysts

Systems analyst – a specialist who **studies** the problems and **needs** of an organization to determine how people, data, processes, and information technology can best achieve improvements for the business.

- A programmer/analyst (or analyst/programmer) includes the responsibilities of both the **computer programmer** and the systems analyst.

- A business analyst **focuses on only** the **non-technical aspects** of systems analysis and design.

System Designers and System Builders

- **System designer** – a technical **specialist** who **translates** system users' business **requirements** and **constraints** into technical solution. She or he **designs** the computer **databases**, **inputs**, **outputs**, **screens**, **networks**, and **software** that will meet the system users' **requirements**.

- **System builders (programmers)** – a technical **specialist** who **constructs** information systems and **components** based on the design **specifications** generated by the **system designers**.

Other Stakeholders

- **External Service Provider** (ESP) – a systems analyst, system designer, or system builder who **sells** his or her **expertise** and **experience** to other businesses to help those businesses **purchase**, **develop**, or **integrate** their information systems **solutions**; may be affiliated with a consulting or services organization.

- **Project Manager** – an **experienced professional** who accepts responsibility for **planning**, **monitoring**, and **controlling projects** with respect to **schedule**, **budget**, **deliverables**, customer **satisfaction**, technical **standards**, and system **quality**.

Need for Systems Analysis and Design

- **Installing** a system without **suitable** planning leads to great user dissatisfaction and frequently causes the system to fall into **disuse**.
- **Supports** structure to the analysis and design of information systems.
- A series of processes **systematically** undertaken to **improve** a business through the use of computerized information systems.

Hint: user involvement throughout the systems project is critical to **the successful** development of computerized information systems.

Roles of the Systems Analyst

- The analyst must be able to work with people of all descriptions and be experienced in working with computers.
- The systems analyst systematically evaluates how users interact with technology and business function.

- Three primary roles:
  - Consultant
  - Supporting expert
  - Agent of change

Roles of the Systems Analyst

Consultant:

- **Advantage: can bring with them a fresh perspective that other people in an organization do not possess.**

Supporting expert:

- **Draws on professional expertise concerning computer hardware and software and their uses in the business.**
- **Serves as a resource for those who are working on and managing other projects.**

Agent of change:

- **A person who causes changing, developing a plan for change, and works with others in facilitating that change.**

Qualities of the Systems Analyst

The successful systems analyst must possess a wide range of qualities.

- Problem solver: views the analysis of problems as a challenge and enjoys workable solutions.
- Communicator: capable of relating meaningfully to other people over extended periods over time. Need enough computer experience to program, to understand the capabilities of computers, gather information requirements from users, and communicate what is needed to programmers.
- Strong personal and professional ethics: need to shape their client relationships.
- Self-disciplined and self-motivated: must be able to coordinate other people as well as project resources.

Skills Needed by the Systems Analyst

1. Computer programming experience and expertise.
2. General business knowledge.
3. General problem-solving skills.
4. Good interpersonal communication skills.
5. Good interpersonal relations skills.
6. Flexibility and adaptability.
7. Character and ethics.

Thanks

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