



SYSTEMS and INFORMATION SYSTEMS

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91-2



System Concepts

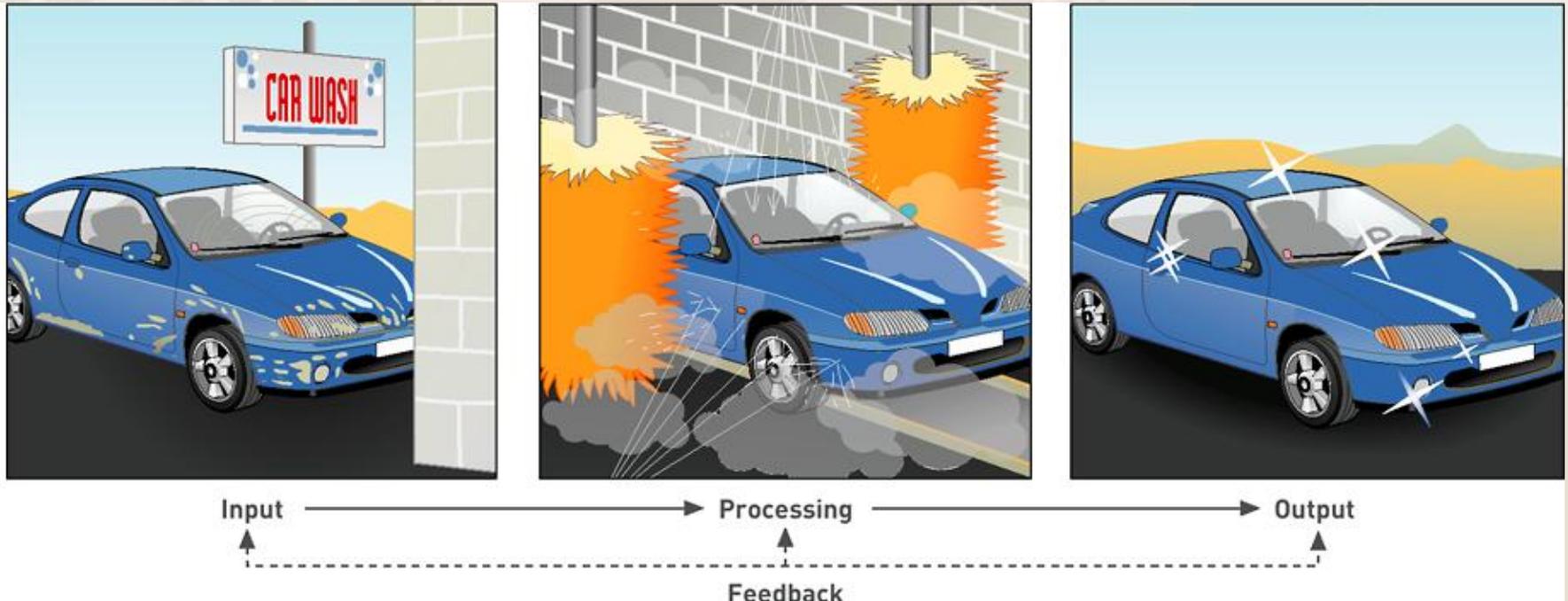
- **System**
 - A set of elements or components that interact to accomplish goals
- **Components of a system**
 - Input
 - Processing
 - Output
 - Feedback



Management Information Systems

SYSTEMS and INFORMATION SYSTEMS

System Concepts





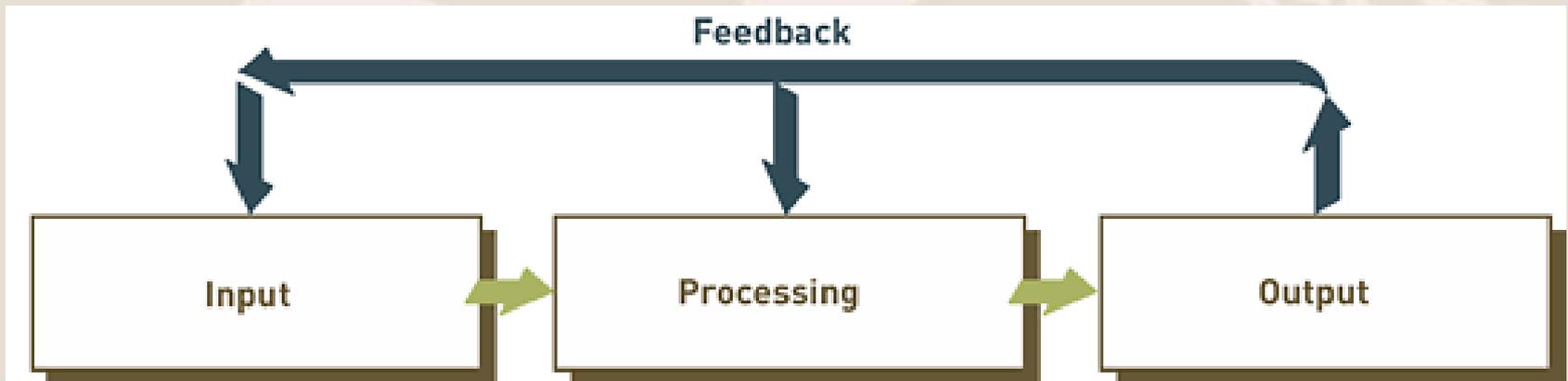
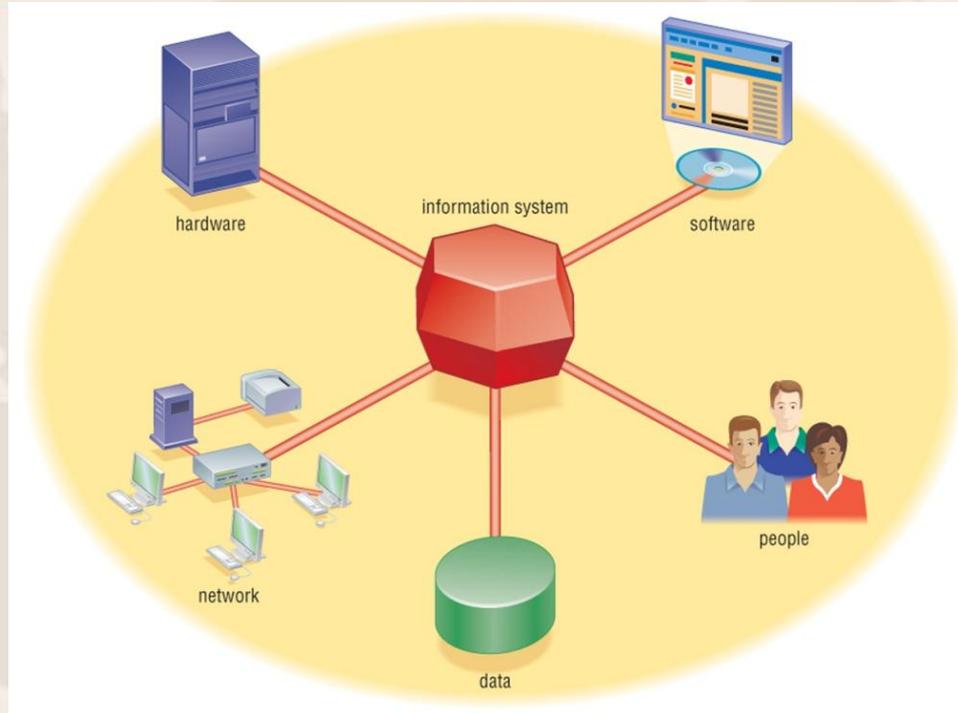
What Is an Information System?

- An **information system** is a combination of people, hardware, software, computer networks, and data that organizations use to manage daily and long-term operations.
- Information system:
 - Set of interrelated components
 - Collect, process, store, and distribute information
 - Support decision making, coordination, and control



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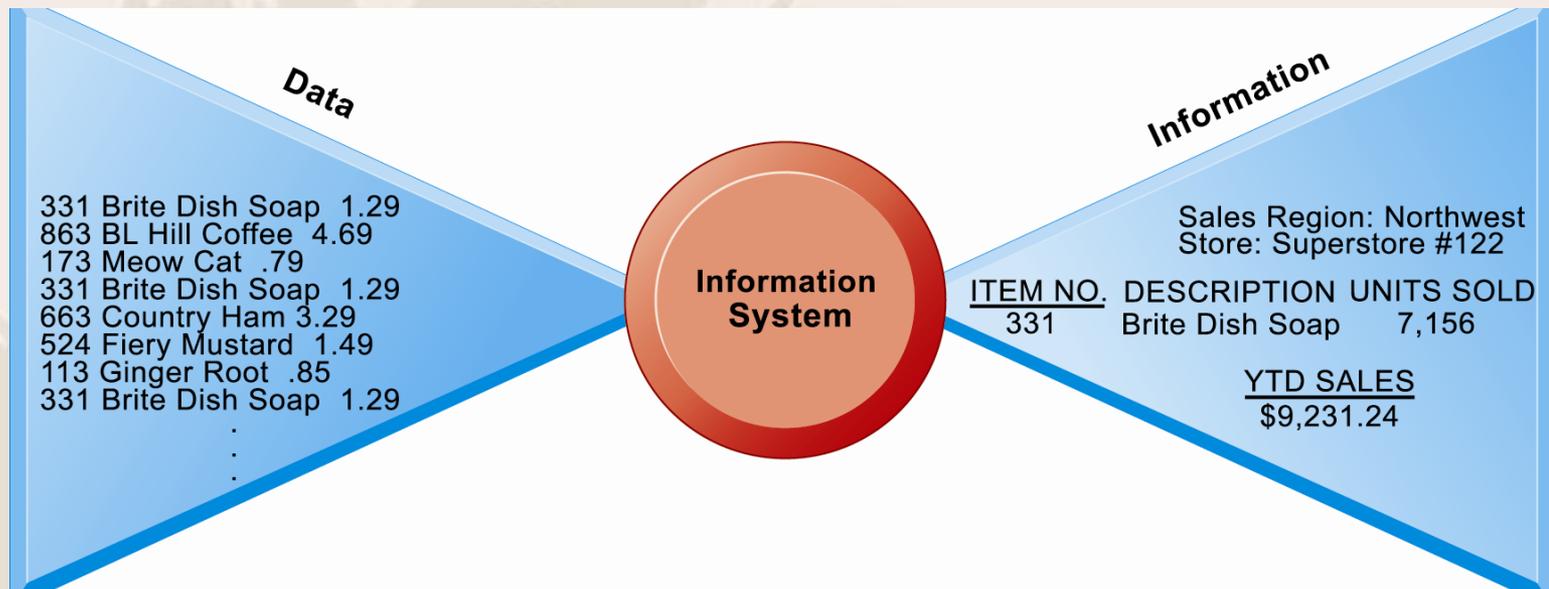


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Perspectives on Information Systems

- Data and Information



Raw data from a supermarket checkout counter can be processed and organized to produce meaningful information, such as the total unit sales of dish detergent or the total sales revenue from dish detergent for a specific store or sales territory.



Information Systems

- **Three activities of information systems produce information organizations need**
 1. **Input:** Captures raw data from organization or external environment
 2. **Processing:** Converts raw data into meaningful form
 3. **Output:** Transfers processed information to people or activities that use it
 4. **Feedback:** Output returned to appropriate members of organization to help evaluate or correct input stage



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ارکان سیستم های اطلاعاتی

- Information storing system (ISS)
- Information processing system (IPS)
- Information retrieving system (IRS)



اجزا سیستم های اطلاعاتی

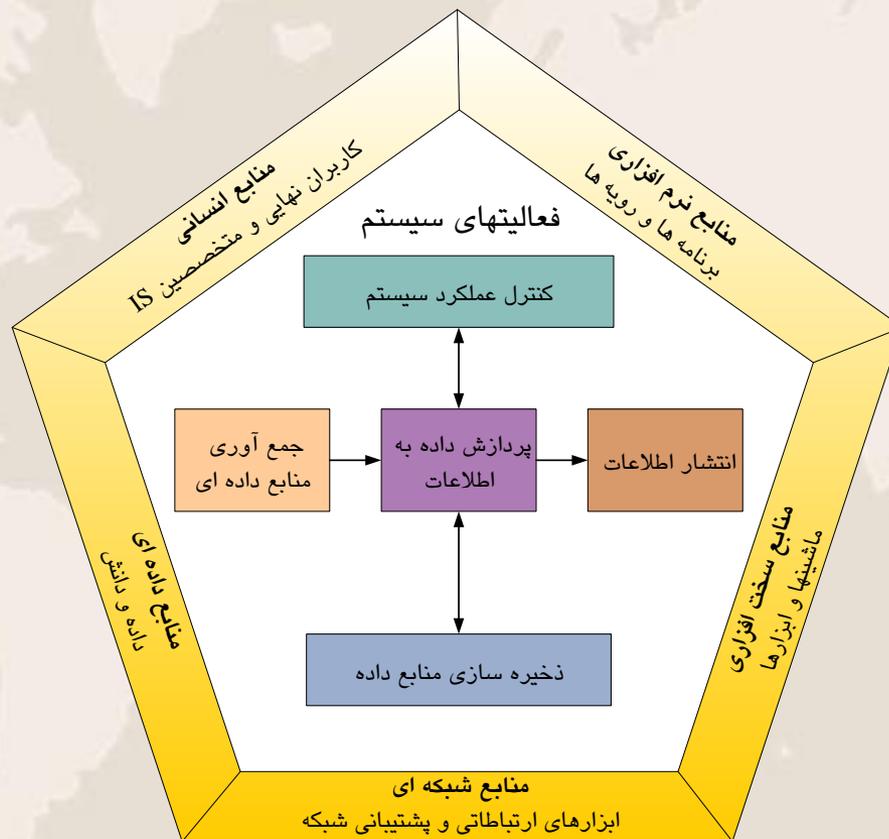
- ورودی ها:
 - داده ها یا اطلاعاتی از عملیات، رویدادها، پرسش ها، ضوابط
- پردازش و مدل ها:
 - مجموعه ای از قواعد منطقی، فرمول های محاسباتی و ریاضی، مدل های شبیه سازی و ...
- پایگاه اطلاعاتی:
 - محل ذخیره داده ها
- کنترل ها:
 - ایجاد امکاناتی جهت اطمینان از صحت عملکرد سیستم و جلوگیری از اشتباهات
- منابع داده پردازش:
 - سخت افزار، نرم افزار، کاربران
- خروجی ها:
 - محصول سیستم (اولین جزء در طراحی)



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اجزا و فعالیتهای یک سیستم اطلاعاتی





Information Systems in the Functional Areas of Business

- **Finance and accounting**
- **Sales and marketing**
- **Manufacturing**
- **Human resource management**
- **Legal information systems**



Information Systems in Industry

- **Airline industry**
- **Investment firms**
- **Banks**
- **Transportation industry**
- **Healthcare organizations**
- **Retail companies**
- **Power management and utility companies**
- **Professional services**



Manual and Computerized Information Systems

- **An information system can be:**
 - **Manual**
 - **Computerized**



Computer-Based Information Systems

- **CBIS components**
 - **Hardware:** computer equipment used to perform input, processing, and output activities
 - **Software:** computer programs that govern the operation of the computer
 - **Database:** organized collection of facts and information
 - **Telecommunications:** electronic transmission of signals for communications
 - **Networks:** connect computers and equipment in a building, around the country, and around the world



Perspectives on Information Systems

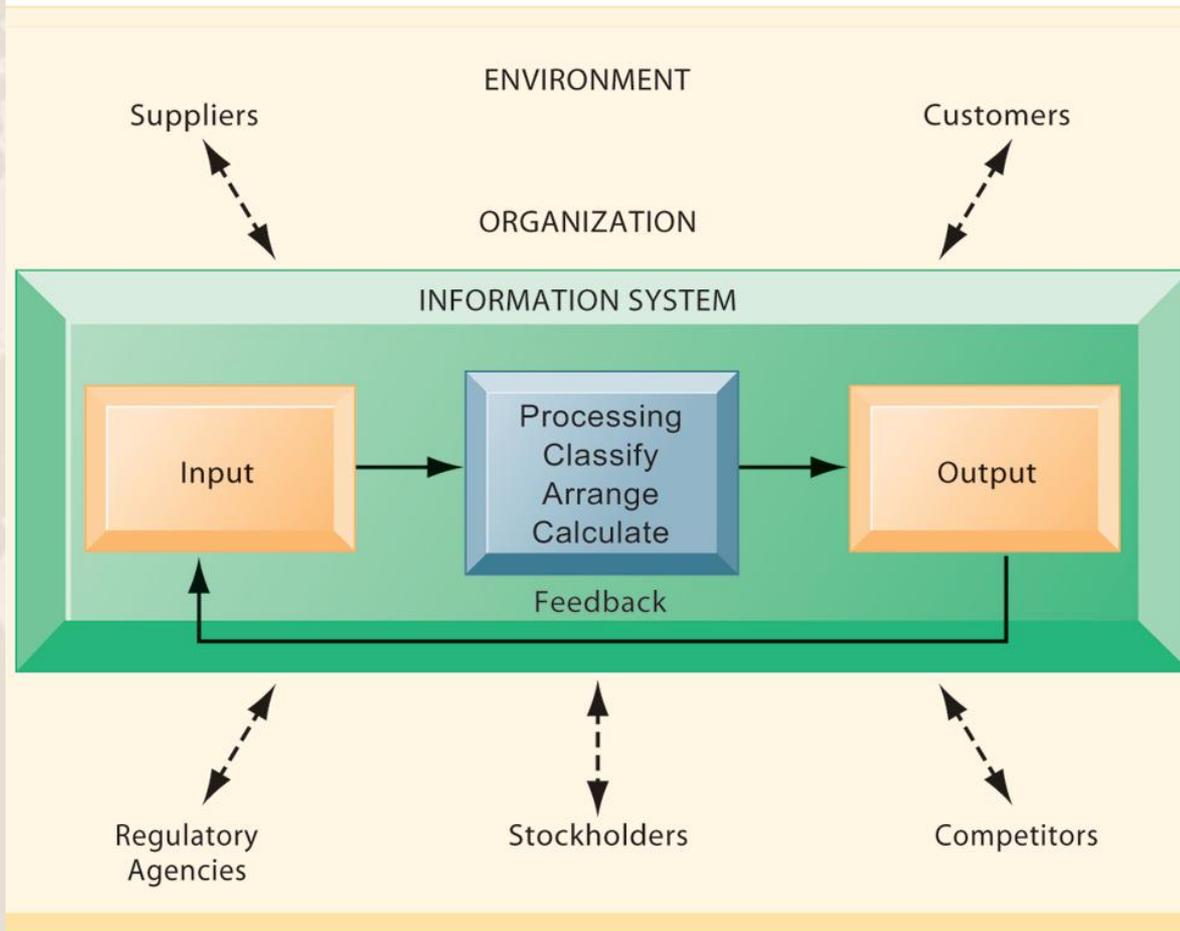
- **Computer/Computer program vs. information system**
 - **Computers and software are technical foundation and tools, similar to the material and tools used to build a house**



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Perspectives on Information Systems



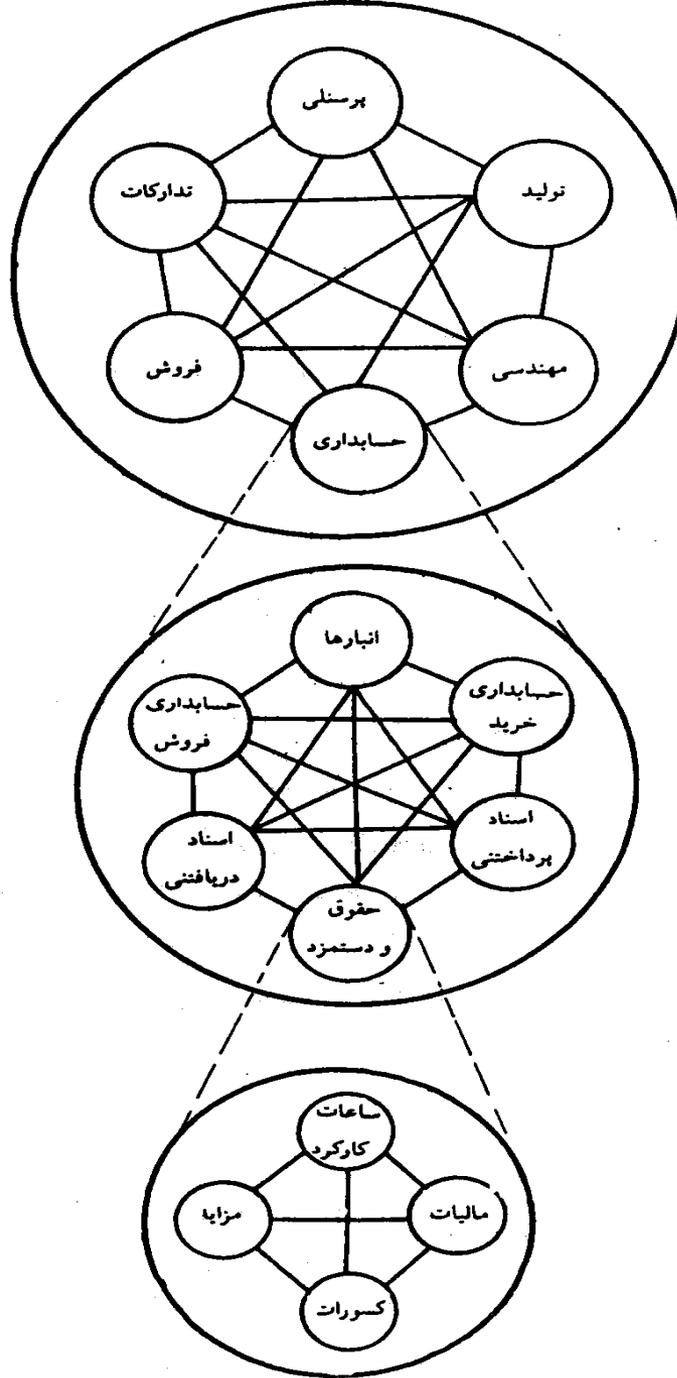


Information Processing

- Calculation
- Sorting
- Merging
- Summarizing
- Compression
- Classifying
- Filtering
- Indexation
- Context analysis
- Controlling



سلسله مراتب سیستم ۵





طبقه بندی سیستم های اطلاعاتی

• از بعد ماهیت

– طبیعی

• سیستم های اطلاعاتی موجودات زنده

– سیستم اطلاعات ژنتیک

– سیستم اطلاعات شیمیایی

– سیستم اطلاعات رادیویی

– سیستم اطلاعات عصبی

– مصنوعی



طبقه بندی سیستم های اطلاعاتی

• از نظر کاربرد

– **Management Support System (MSS)**

- MIS
 - Executive IS (EIS)
 - Strategic IS (SIS)
 - Decision Support System (DSS)
 - Expert System (ES)

» پزشکی

» وسایل خانگی



طبقه بندی سیستم های اطلاعاتی

– Operation Support System (OSS)

- Transaction Processing System (TPS)
- Office IS (OIS)
- Human IS (HIS)
- Accounting IS (AIS)
- Production IS (PIS)
- Geographic IS (GIS)
- Document IS (DIS)