

Information Systems and Technology

Basic concepts, components, organizational levels, and the evolution of their roles.

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Is the SIAMIK website an Information System?



An application ≠ the entire system

SIAMIK becomes an Information System when technology is connected with people, procedures, data, and organizational goals.

Discuss: who are the users, what data are processed, and what decisions are produced?

IT provides the tools. IS creates value.

IT provides technological capabilities. IS integrates people, processes, data, and technology to produce information and support organizational goals.

INFORMATION TECHNOLOGY (IT)

Focus on technology

Server • database • internet
applications • cloud • AI

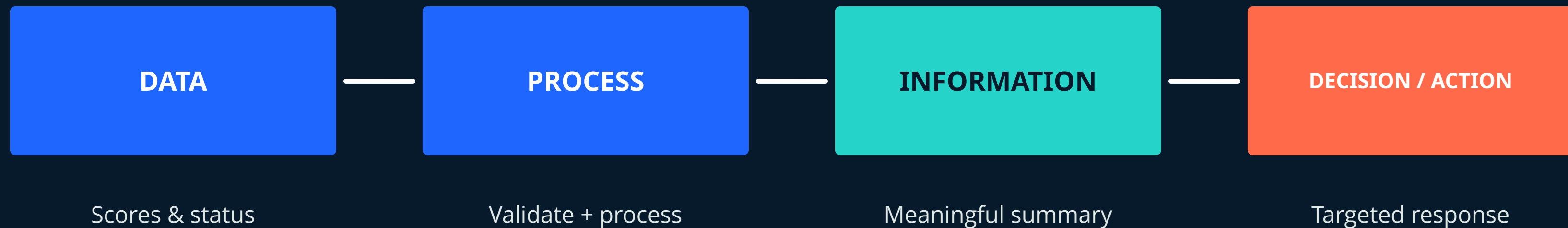
INFORMATION SYSTEMS (IS)

Focus on socio-technical systems

Academic systems • sales
hospitals • ERP • DSS

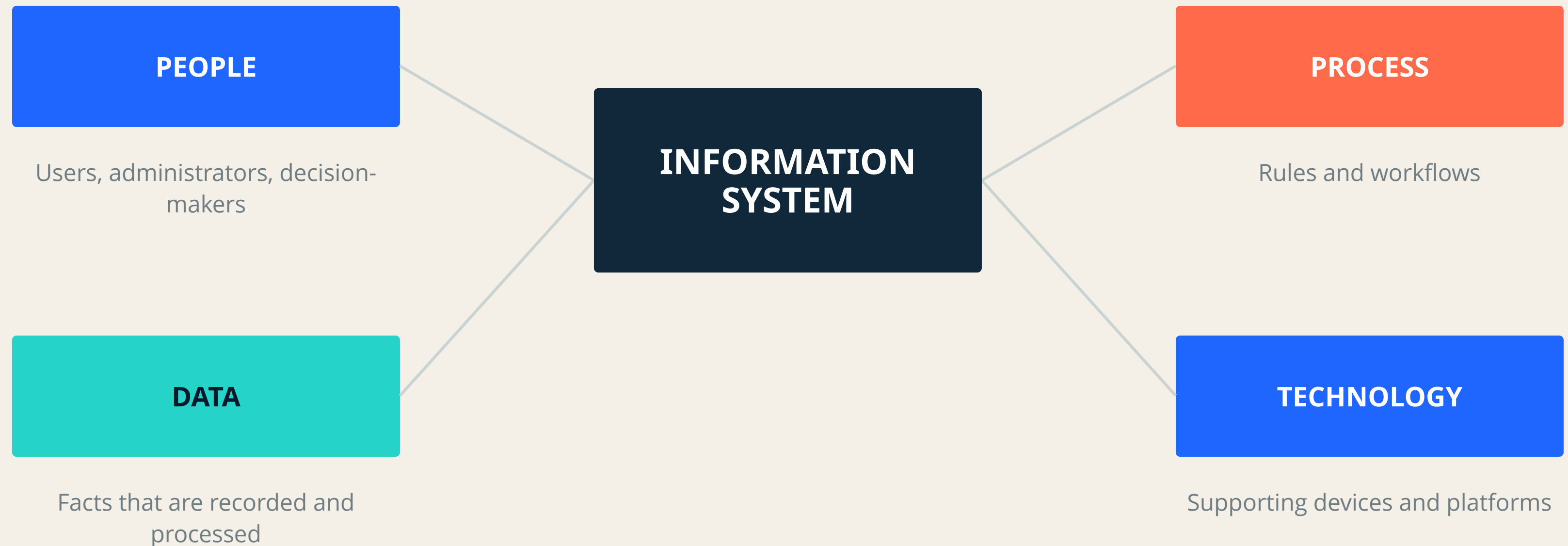
IT is an essential part of IS - but IS also includes people, processes, data, and goals.

From raw facts to action



Academic example: exam scores → calculation → semester GPA → decision to retake a course.

Four main conceptual components of an Information System



Infrastructure that enables IS to work



HARDWARE

Computers, scanners, servers

SOFTWARE

POS applications, operating systems

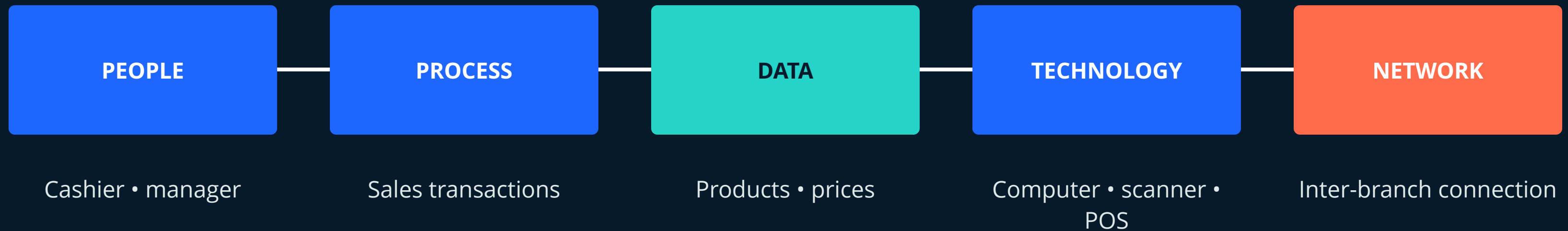
DATABASE

Products, customers, transactions

NETWORK

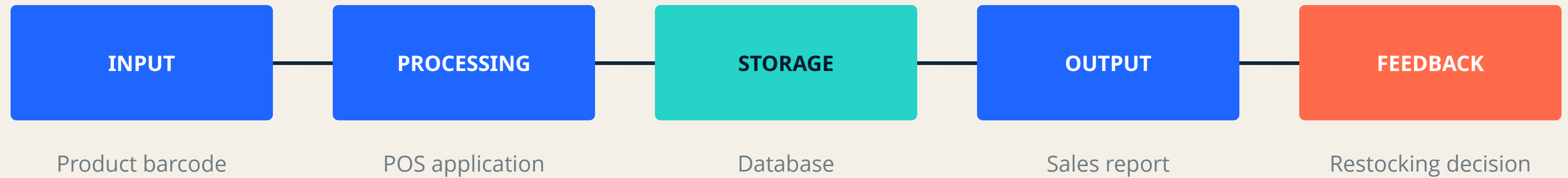
Internet, LAN, branch connections

A cashier system is more than a POS application



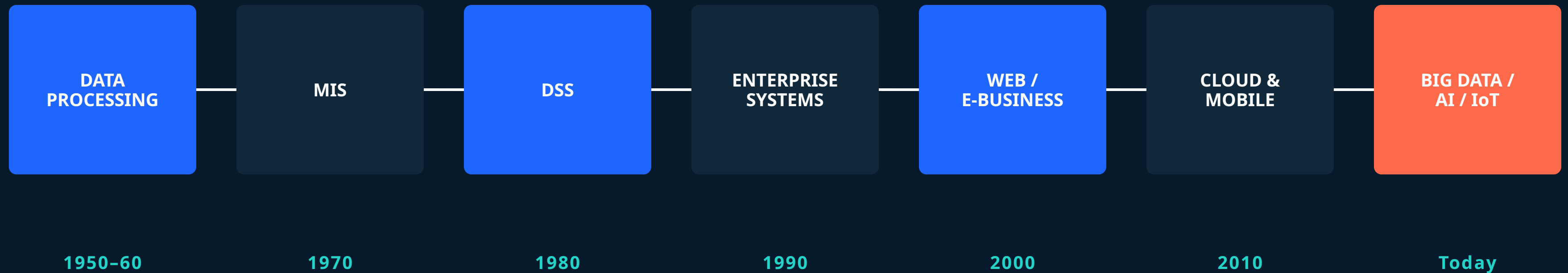
OUTPUT sales & stock reports → **DECISION** restocking & promotions

CBIS cycle: information continuously feeds back to improve the system



Feedback improves inputs, process rules, and subsequent policies.

From data automation to organizational intelligence



Overview of the major evolution of IS/IT

IT value rises as it gets closer to decisions

BUSINESS STRATEGY

Competitive advantage and innovation

DECISION-MAKING

Insights and control

ORGANIZATIONAL INTEGRATION

Shared data across functions

WORK AUTOMATION

Transaction efficiency

Three levels, three decision horizons

STRATEGIC

Long-term analysis and decisions

MANAGERIAL

Monitoring, control, and reporting

OPERATIONAL

Daily transactions and record-keeping

Where are IS/IT used in organizations?



Supply Chain Management (SCM)

integrates the supply chain

ERP stands for Enterprise Resource Planning

integrates internal processes and data

Customer Relationship Management (CRM)

manages customer relationships

Decision Support System (DSS)

supports decision-making

E-Business

runs business processes digitally

Will be discussed in more depth in upcoming sessions.

One application can serve more than one level

	OPERATIONAL	MANAGERIAL	STRATEGIC
SCM			
ERP			
CRM			
DSS			
E-BUSINESS			

SCM supply chain • ERP internal integration • CRM customers • DSS decisions • E-Business digital channels

Analyze a Real Organization

MARKETPLACE

HOSPITAL

CAMPUS

CONVENIENCE STORE

IDENTIFY

People • Process • Data • Hardware • Software • Network

Then define the information outputs and resulting decisions, and analyze how the components relate.

Work format: each group selects one case, maps the components, then presents the relationships among them.

Convenience-store cashier system: from transactions to restocking

PEOPLE

Cashier, branch manager

PROCESS

Sales & stock reporting

DATA

Products, prices,
transactions

HARDWARE

Computer & scanner

SOFTWARE

POS application

NETWORK

Branch ↔ headquarters

OUTPUT

Sales & stock reports

DECISION

Restocking & promotions

Technology is a tool. A system is how we create value.



Questions • comments • examples from your organization

Thank you - let's discuss.