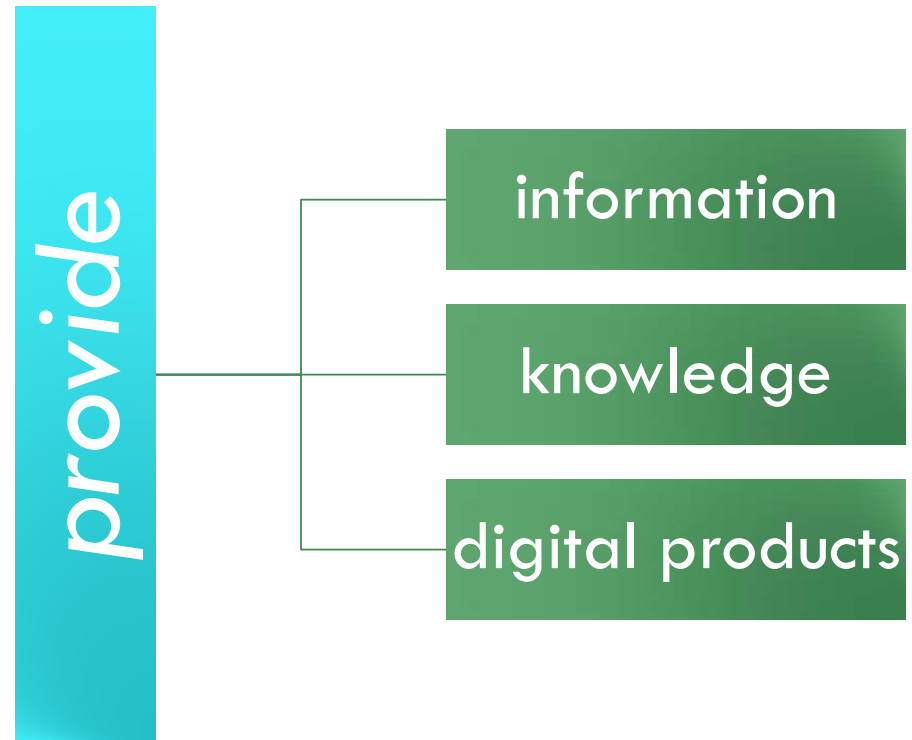
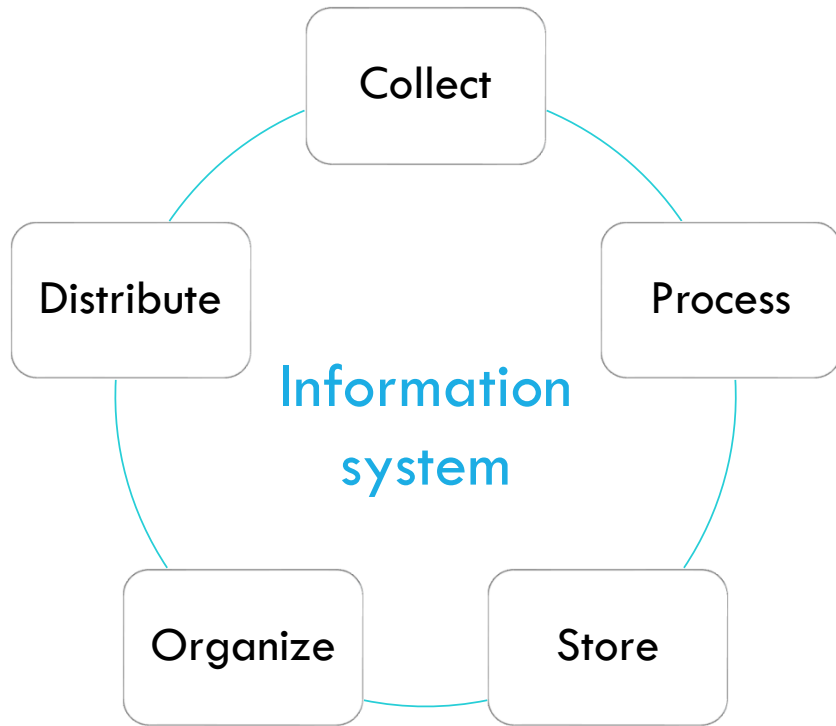


A complex network diagram with various sized nodes (black, blue, grey) connected by thin grey lines, set against a light blue background with faint circular patterns.

FOREST INFORMATION SYSTEMS

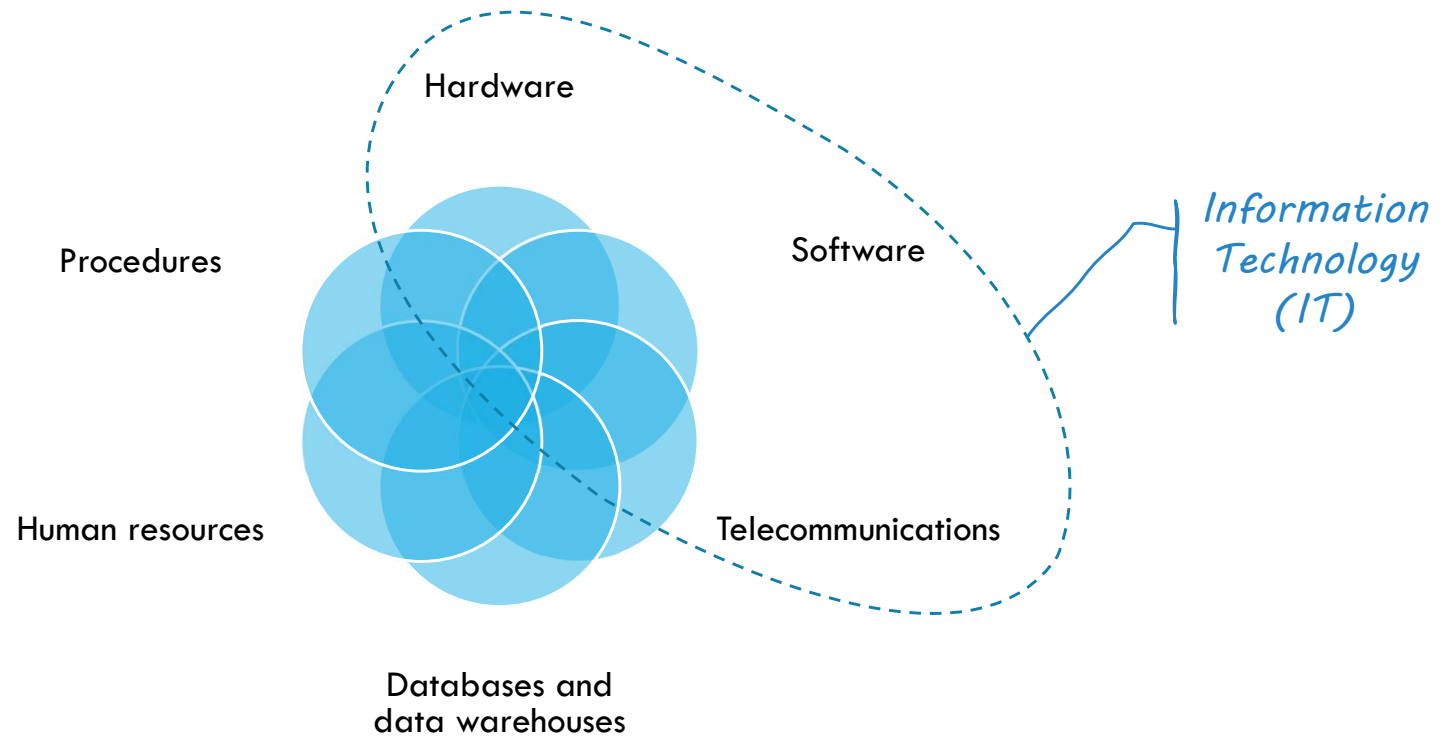
Andrzej Talarczyk, Forest and Natural Resources Research Centre / TAXUS IT

WHAT ARE INFORMATION SYSTEMS?



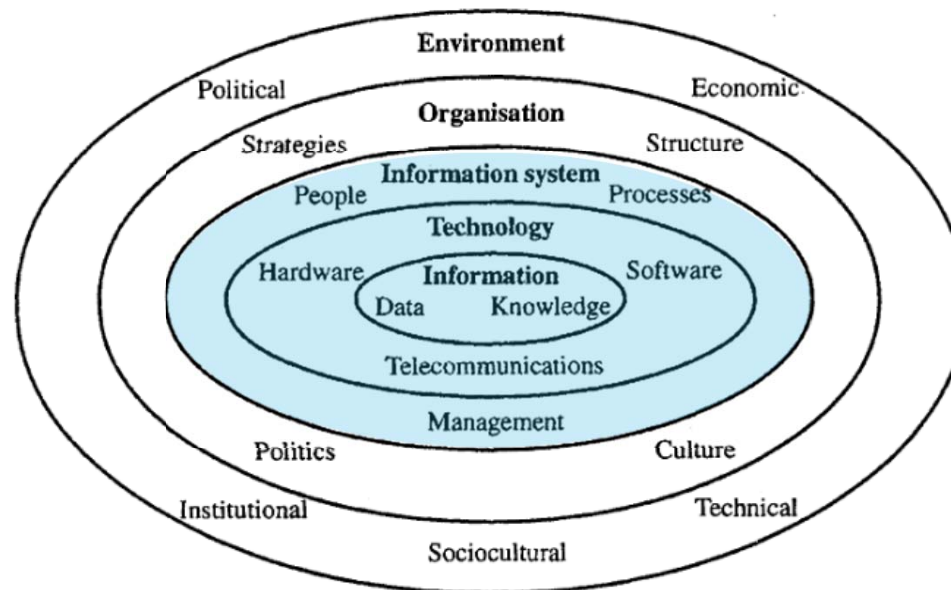
WHAT ARE INFORMATION SYSTEMS?

Integrated set of components



WHY DO WE NEED INFORMATION SYSTEMS?

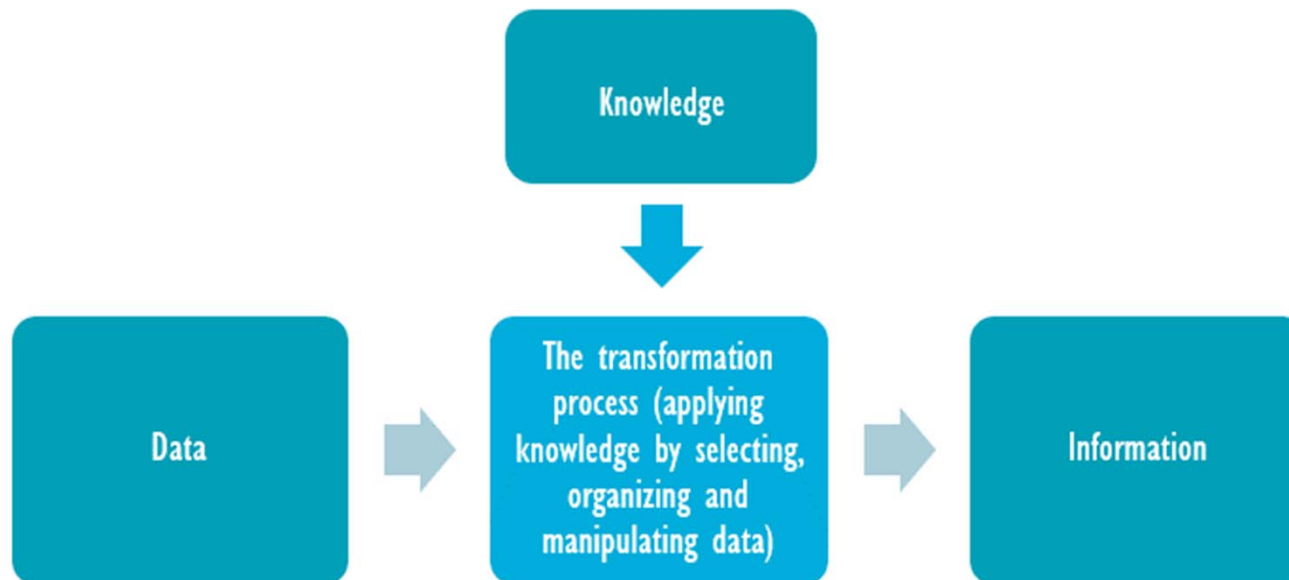
Information systems should be perceived as a type of social systems, embedded in a wider social and cultural context. In fact, they are **systems of communication** within the organization and/or the society.



(after Heeks, 2017)

WHY DO WE NEED INFORMATION SYSTEMS?

- **Data** is a set of raw real-world facts describing physical objects or events.
- **Information** is a collection of facts organized so that they have additional value.
- **Knowledge** is understanding relationships between data items and how that information can be made useful for a particular task/objective.



(after Stair and Reynolds, 2010, modified)

TYPES OF INFORMATION SYSTEMS

DSS (decision support systems)

- Computer programs intended to find and make efficient decisions. DSS process information to provide decision-makers with options, and with information necessary for informed decisions.

RMS (resource management systems)

- Utility programs for resource accounting and distribution. These are commonly used in business, but political institutions use them to control resources on a continuous basis.

ISS (information-sharing systems)

- Programs to arrange the internal structural operations of political institutions and encourage information-exchange within and between public authorities, economic, research and engineering corporations, forest management bodies, private corporations, and other organizations. An ISS platform may contain variable databases with strategically useful information.

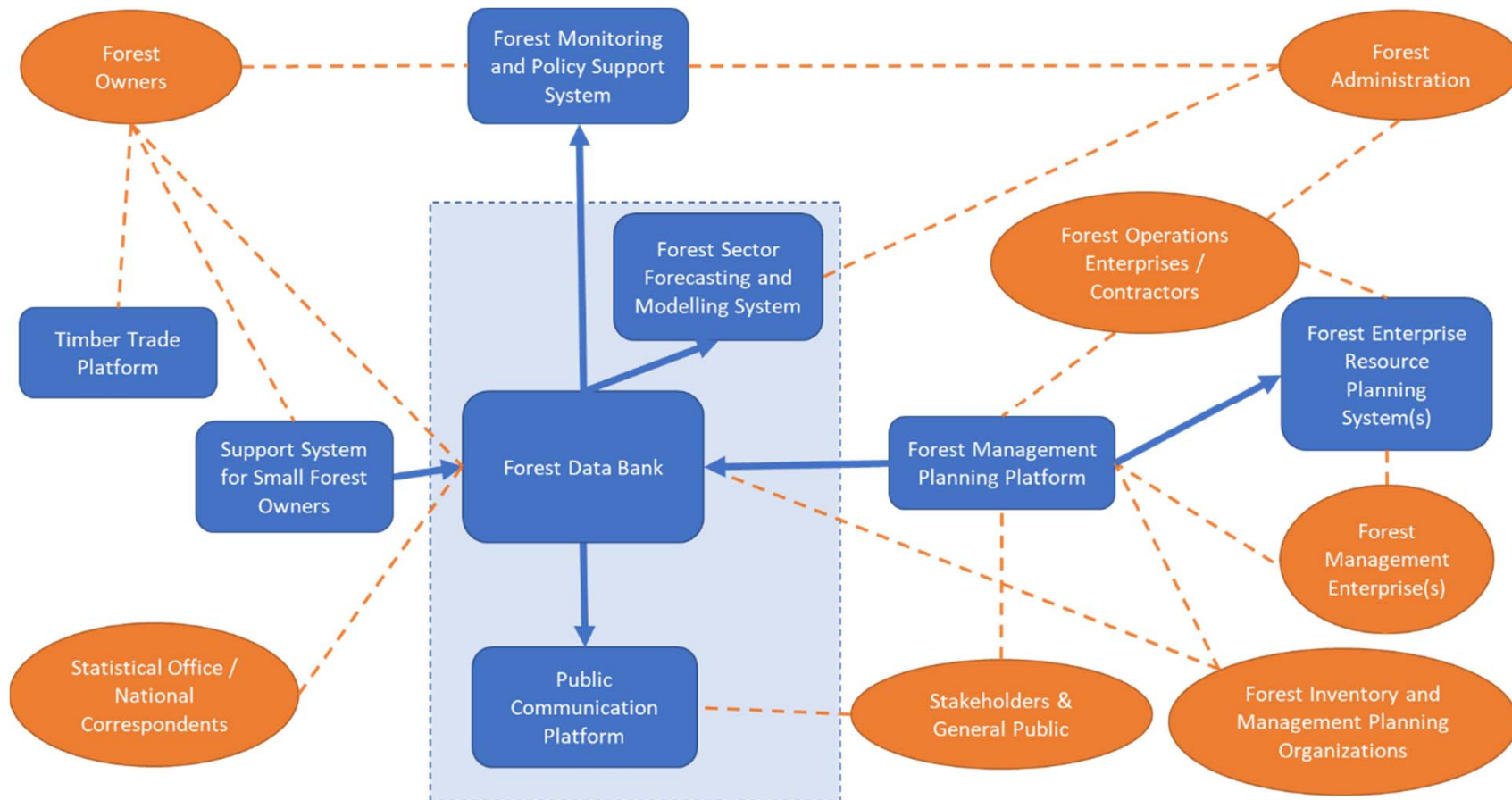
CSS (communication support systems)

- Specialized software for online use, plus web resources providing interactive political processes to increase social engagement, thereby evolving a “network society”. CSS are used to publicize strategic information, monitor political information, and make the law-development process transparent, thereby adding legitimacy.

INFORMATION IS AN INDISPENSABLE FACTOR IN FOREST POLICY AND MANAGEMENT

- Forest policy is a complex, multi-disciplinary subject.
- An effective forest policy needs informed decisions about the maintenance, protection and use of forest resources.
- Information technologies help retrieve information, process it, and provide it to political institutions in an optimal way, leading to effective administration of resources.
- It is influenced by forest economics, ownership, management planning and law, climate change, bioenergy, afforestation, biodiversity, rural ecosystem services, land use policy, and infrastructure. Forest policy is strongly related to other sectors and, especially nowadays, to public scrutiny on many levels.
- Forest Information Systems (FIS) aid forest policymaking by gathering forest information to support informed choices, monitoring results, and refining policies.
- FIS may also support forest management and operations as a tool to efficiently manage resources and to facilitate communication between stakeholders and with the general public.

COMPONENTS OF FOREST INFORMATION SYSTEMS



BENEFITS OF HAVING FOREST INFORMATION SYSTEM

Information systems can improve operational efficiency, reduce costs, provide decision-makers with better, more complete, information, and thereby improve forest ecosystem services and state governance.

They can provide the following types of data:

- Custom data for a specific task or decision-making process.
- Custom formats which can be tailored to the needs of their users, for example lists and charts.
- Real-time data - particularly useful when rapid action is needed, like dealing with illegal logging or calamities.
- Data about the past, which are particularly useful for reports, analysis and business planning.

BENEFITS OF HAVING FOREST INFORMATION SYSTEM

- 1. Better understanding of the current situation.** Information and communication technologies (ICT) knowledge-management systems store data about the current state of a topic and provide tools to help acquire it. Examples of this include forest inventories and monitoring. They can also offer statistical analysis of this data.
- 2. Predicting changes.** ICT tools can use existing information to provide predictive statistics, expert-based heuristics, and various modelling approaches.
- 3. Formulating solutions.** ICT tools help manage knowledge on why things happen. They can analyse data and help decision-making on various levels: landscape, forest, project/management unit, and forest management planning.
- 4. Implementing solutions.** There is evidence that properly used ICT tools increase operational efficiency, for example by automating standard operations. They also improve process quality, promote synergy of actions, and help manage information flow. Therefore, they can optimise costs and improve results.

FIS STUDY

- What information systems are and why need them.
- Forest information systems: their main functions, components and benefits.
- How to organize and manage the FIS development.
- How to carry out the FIS development.
- FIS in the CCA region – an outline.
- Case studies.



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