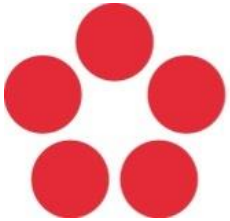


Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice

Information Systems Strategy and Management

ARCHITECTURES IN BUSINESS INFORMATICS

EVROPSKÁ UNIE
Evropské strukturální a investiční fondy
Operační program Výzkum, vývoj a vzdělávání

MINISTERSTVO ŠKOLSTVÍ, MLÁDEŽE A TĚLOVÝCHOVY

Essence, principles, and system architecture design and description purpose

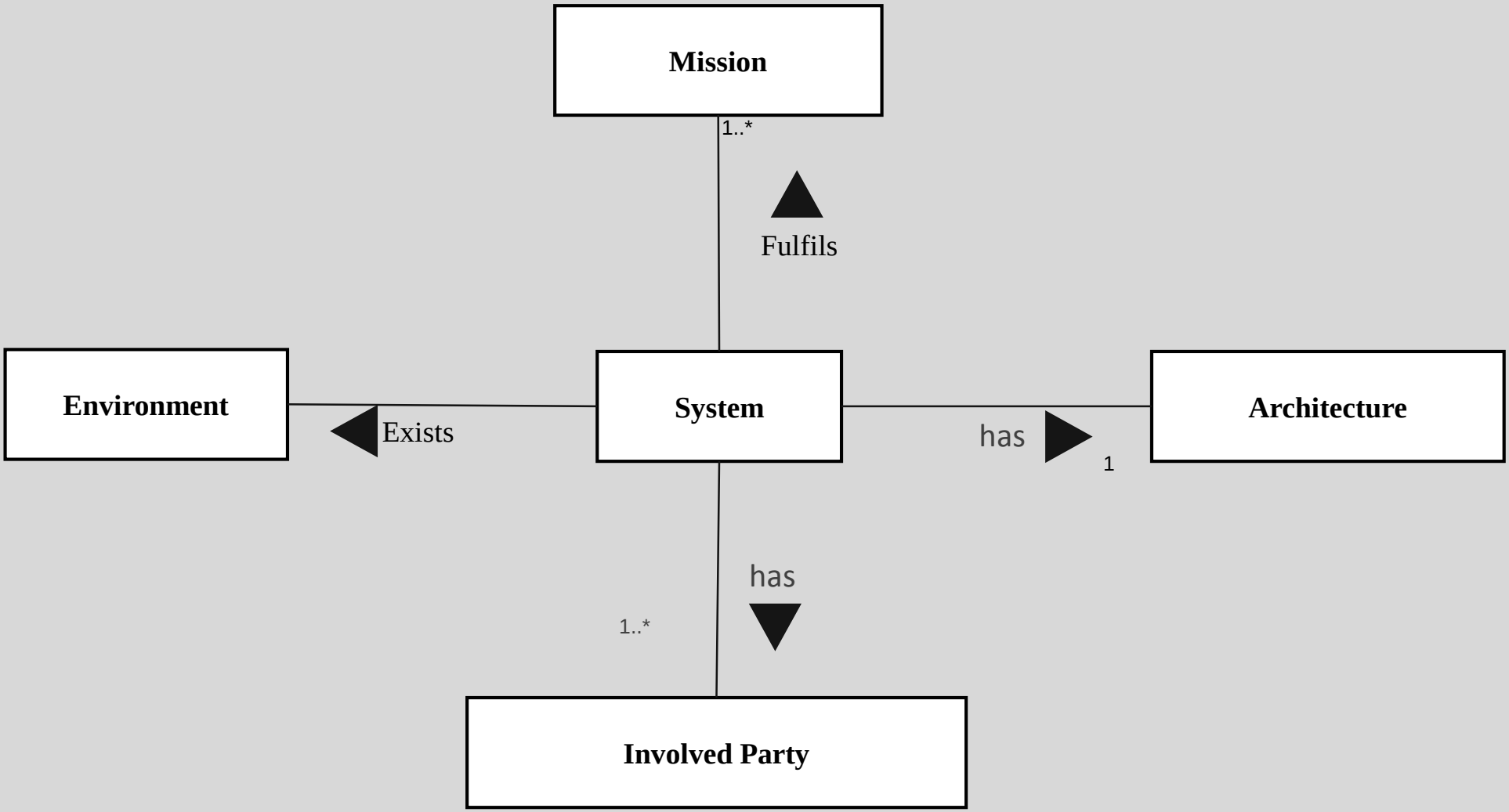


Figure 5-1 Conceptual model of the system and its architecture per(ISO42010, 2007) - (Voříšek k. , 2015)

Architectural Frameworks

- Designing, describing, and using architecture, while managing business informatics, are challenging tasks. Therefore, various architectural frameworks have been created that represent the type of approaches to architecture designing and implementing.

- The architectural framework is a set of interests, stakeholders, redefined aspects, and rules defining the links of views that have been defined to describe architecture in a specific area. (ISO42010, 2007)

- Architectural frameworks can be divided into classification, process and content ones(Zuzák, 2008)

Architectural Frameworks

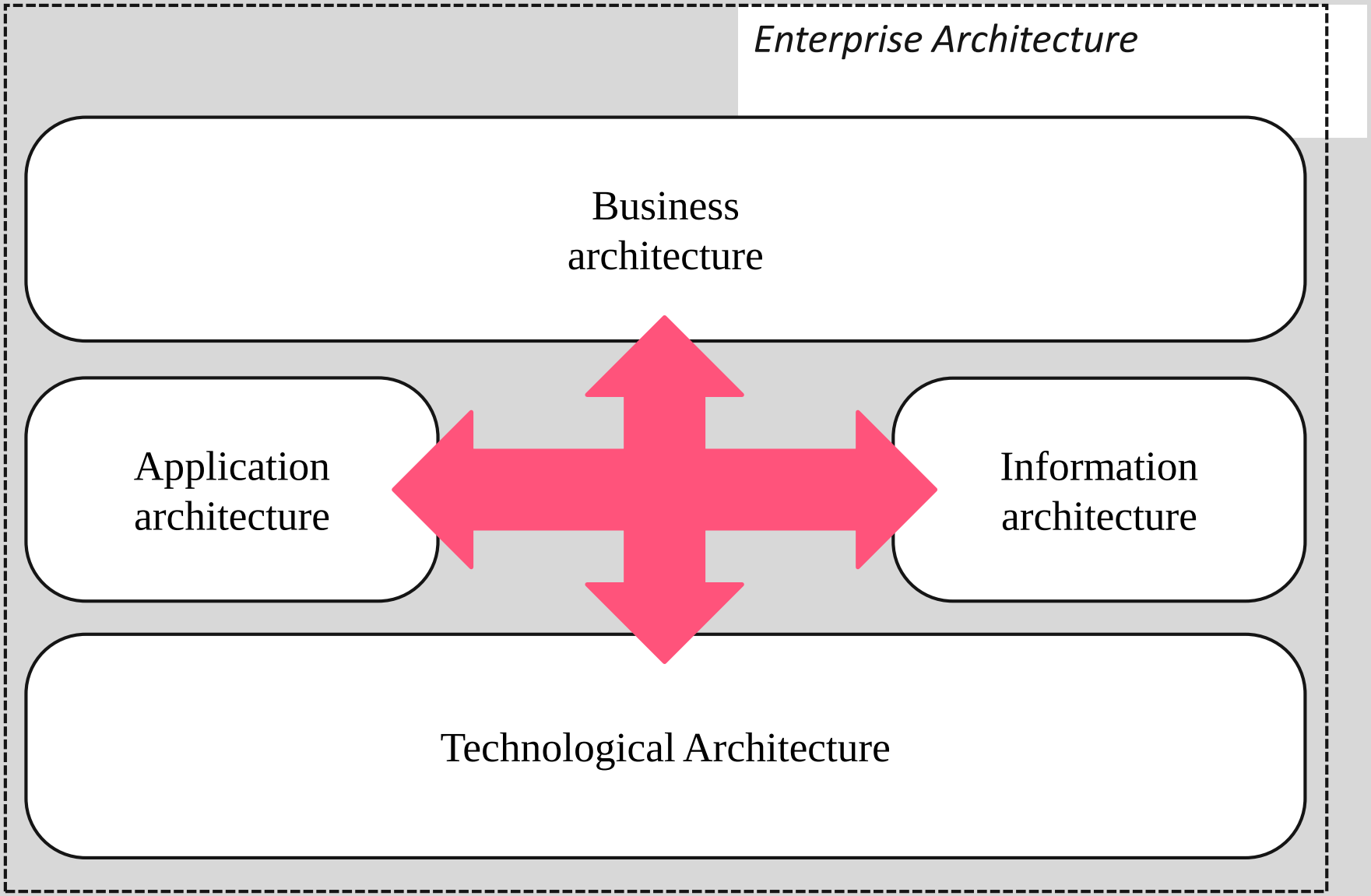


Figure 5-2Typical views in EA - (Voříšek k. , 2015)

Architectural Frameworks

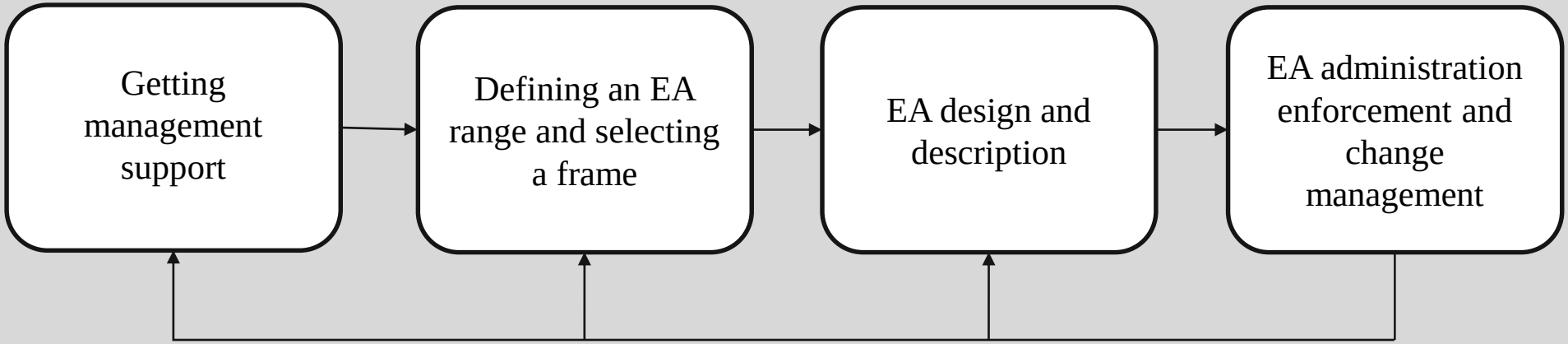


Figure 5-3 Business architecture control process

Essence, principles, and system architecture design and description purpose

Architect's role

- has been transferred to informatics from civil engineering, where the architect "is considered to be the master in controlling all the functional, structural, and aesthetic methods of building and construction and also a supervisor during a building process."(Schekkerman, 2006)
- The architect may be characterized as an expert, strategist, politicians, and leader (Bredemeyer, 2004).

Essence, principles, and system architecture design and description purpose

Architect's role

These properties are fulfilled by a number of skills and knowledge. The key ones are:

- Knowledge of the organization's business and its functioning, understanding the products and services offered by the organization, knowledge of weaknesses and strengths of the organization.
- Ability to always see the components as a whole, and look both at the whole and its parts from different perspectives, ability to model reality.
- Ability to figure out human relationships in a business, identify the key players in decision-making processes.
- Ability to be self-aware and promote one's views, ability to persuade workers to identify themselves with the organization's vision, mission, strategy, and tactics, art of communication in various forms or towards various audiences.

Service Oriented Architecture

- A service-oriented architecture (SOA, Service Oriented Architecture)
- The goal of SOA is to offer the IS functionality in the same way as the business does it to its customers.
- SOA can be understood as policies, practices, and frameworks that allow application functionality to be delivered and consumed as a set of services, at the level of granularity required by the service recipient

Service Oriented Architecture

SOA service is characterized by the following:

- **Loose relationship** - a contract-based service specification encapsulates all of the hidden resources required by the service for its functioning, including the ability to virtualize these resources, and contract is a contractual interface to software logic offered by some application,
- **Standardized** - in various situations, it always displays consistent behaviour, it is reusable and complies with the industry standards,
- **Abstract** - service generalization ensures its high internal business flexibility (it is coarse grain) and at the same time, it is an abstract point (endpoint) through which it responds to system events (typically, asynchronous incoming messages),
- **Composable and modular** - fractal principles allow the use of other specialized and orchestration services to create flexible solutions even while minimizing possible dependencies among services,

Layered Architecture

- Layered architecture is, in line with the concepts specified in an architectural framework that defines the information system building principles.

- The layered architecture principles were originally developed for hardware and software design. Later, they were also applied in other areas, even areas that are not directly related to information systems.

Layered Architecture

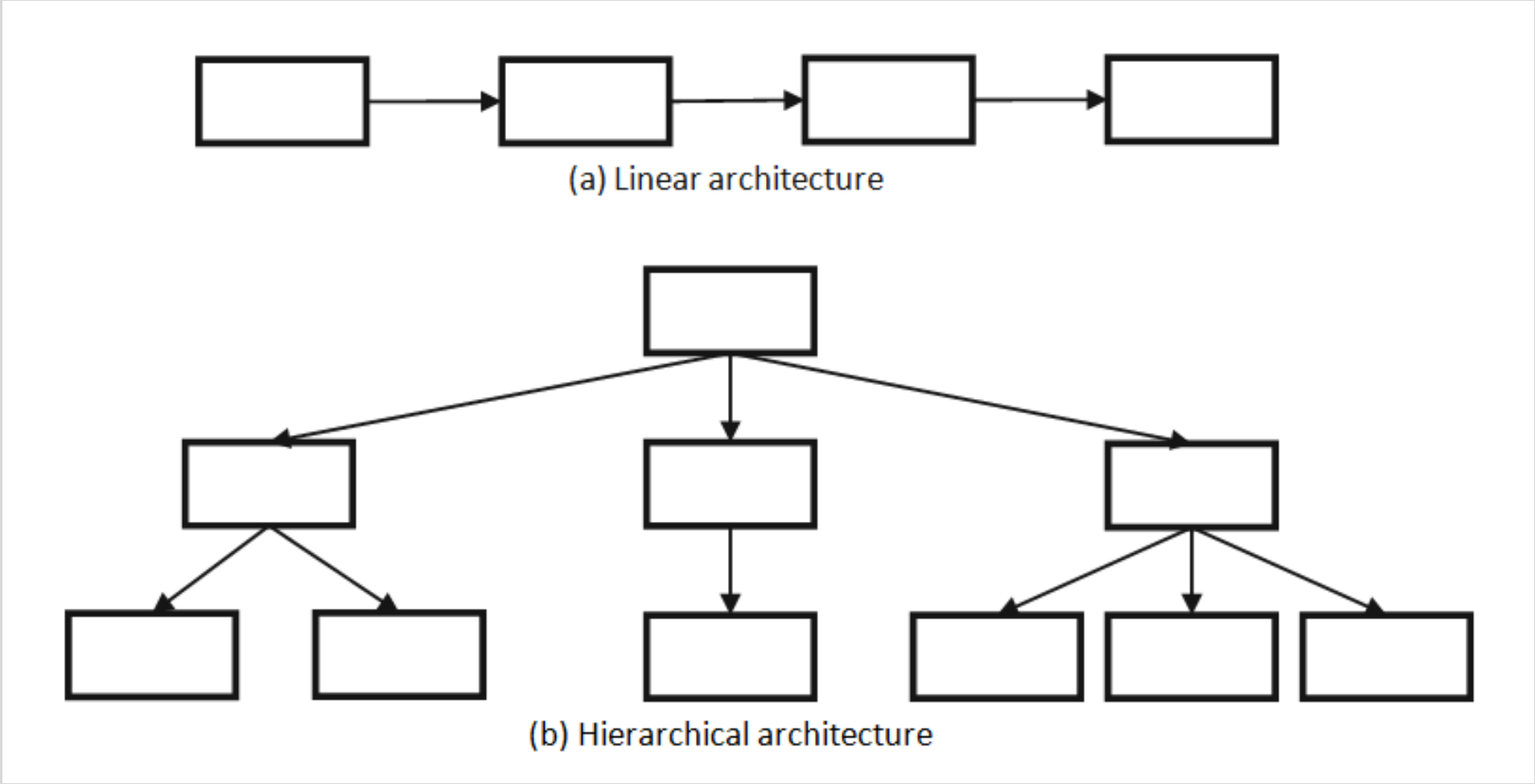
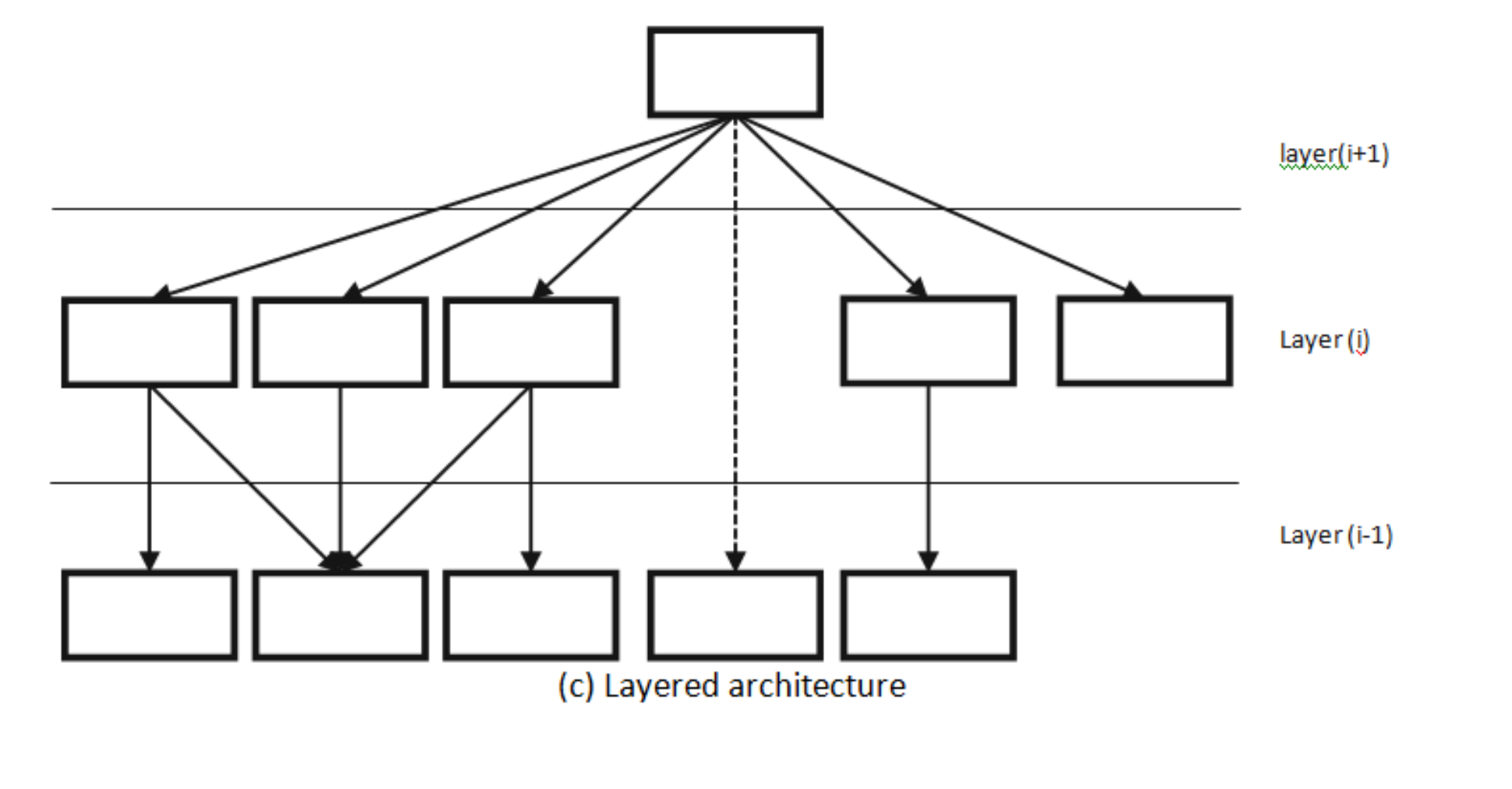


Figure 5-4 Basic types of software architectures - (Voříšek k. , 2015)

Layered Architecture



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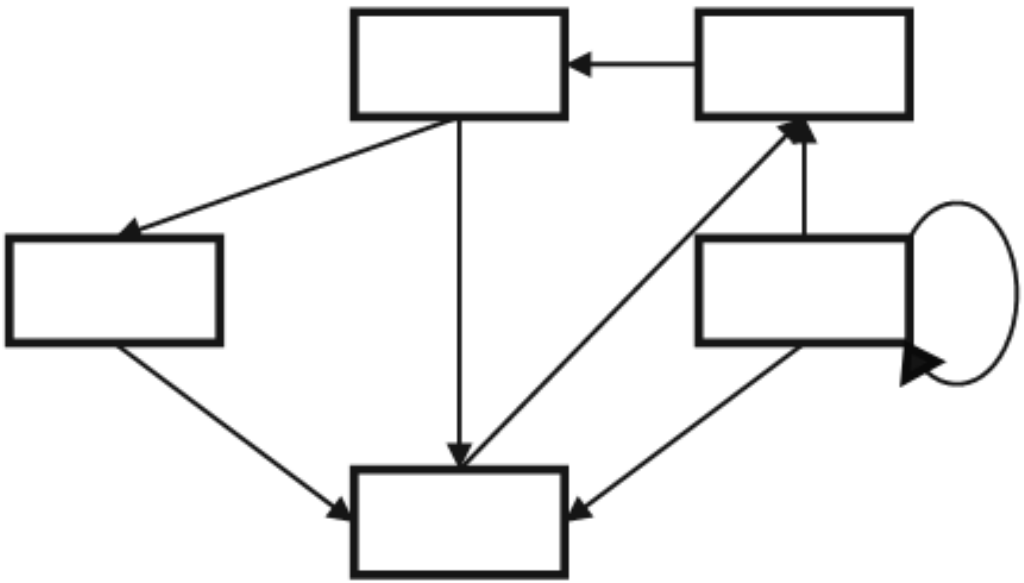

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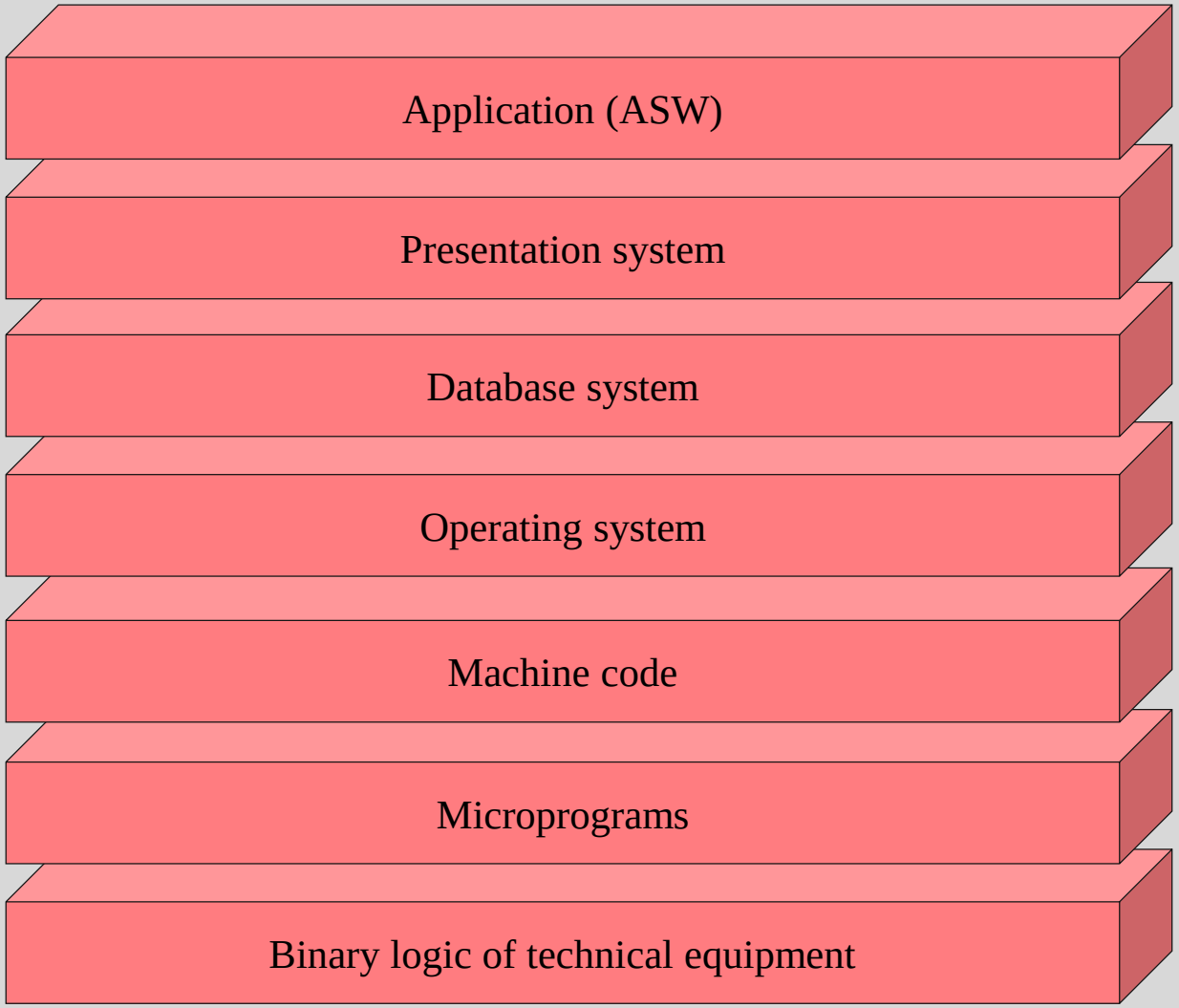

Figure 5-5 Typical basic computer layers- (Voříšek k. , 2015)