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ANALYSIS OF BODIES OF KNOWLEDGE AND THEIR USAGE IN ERP-PROJECTS

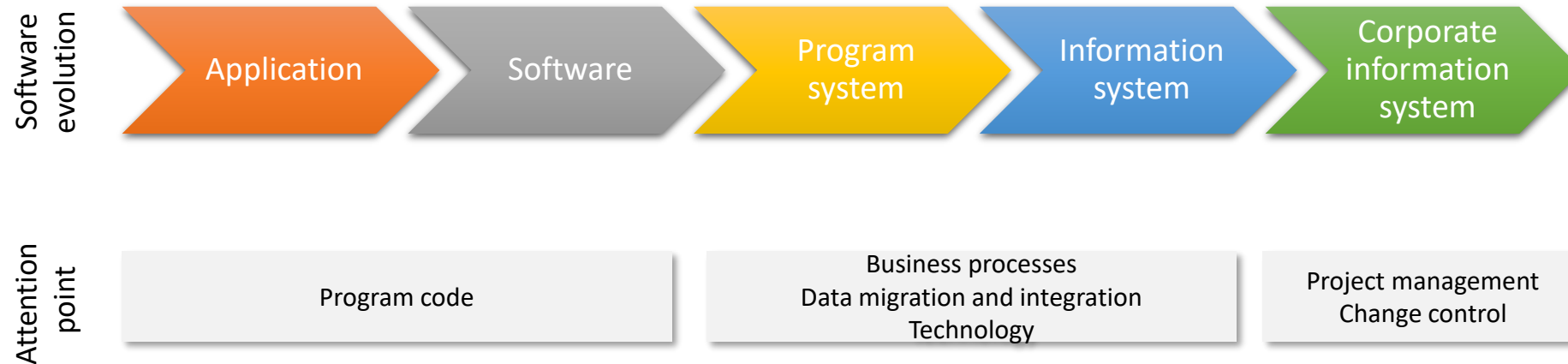
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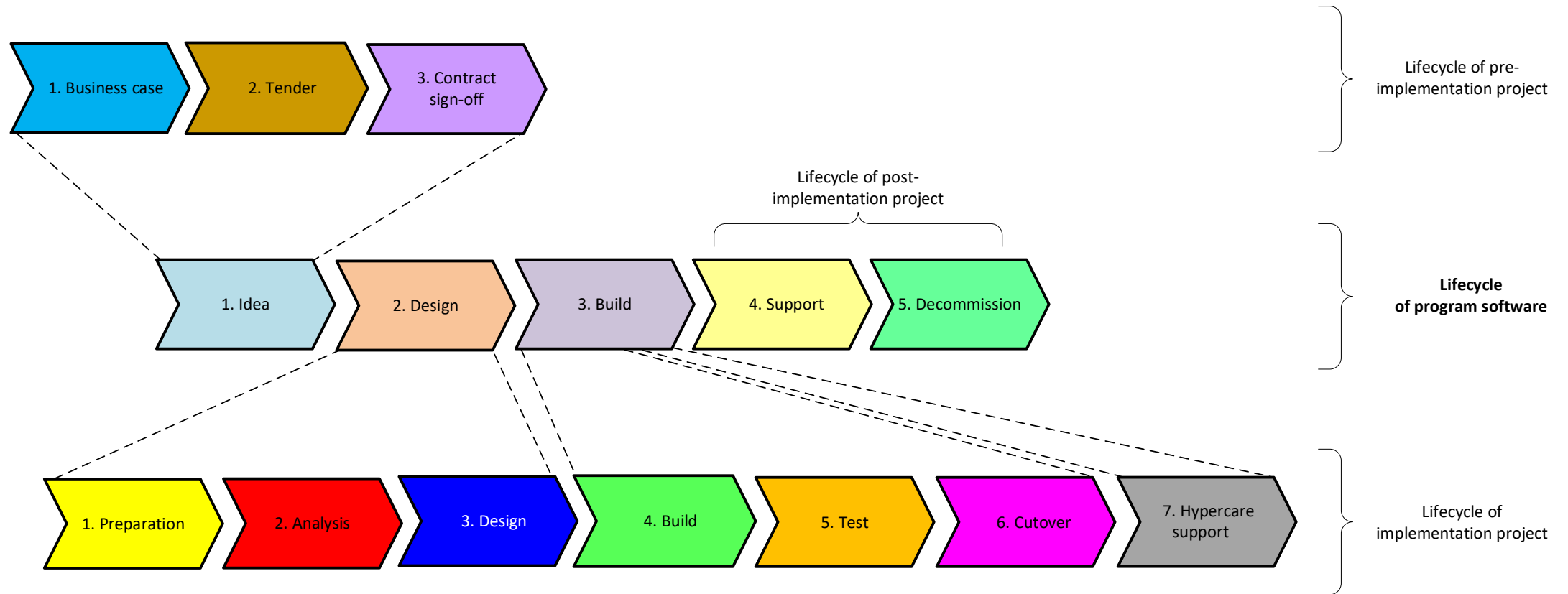
1. From application to corporate information systems



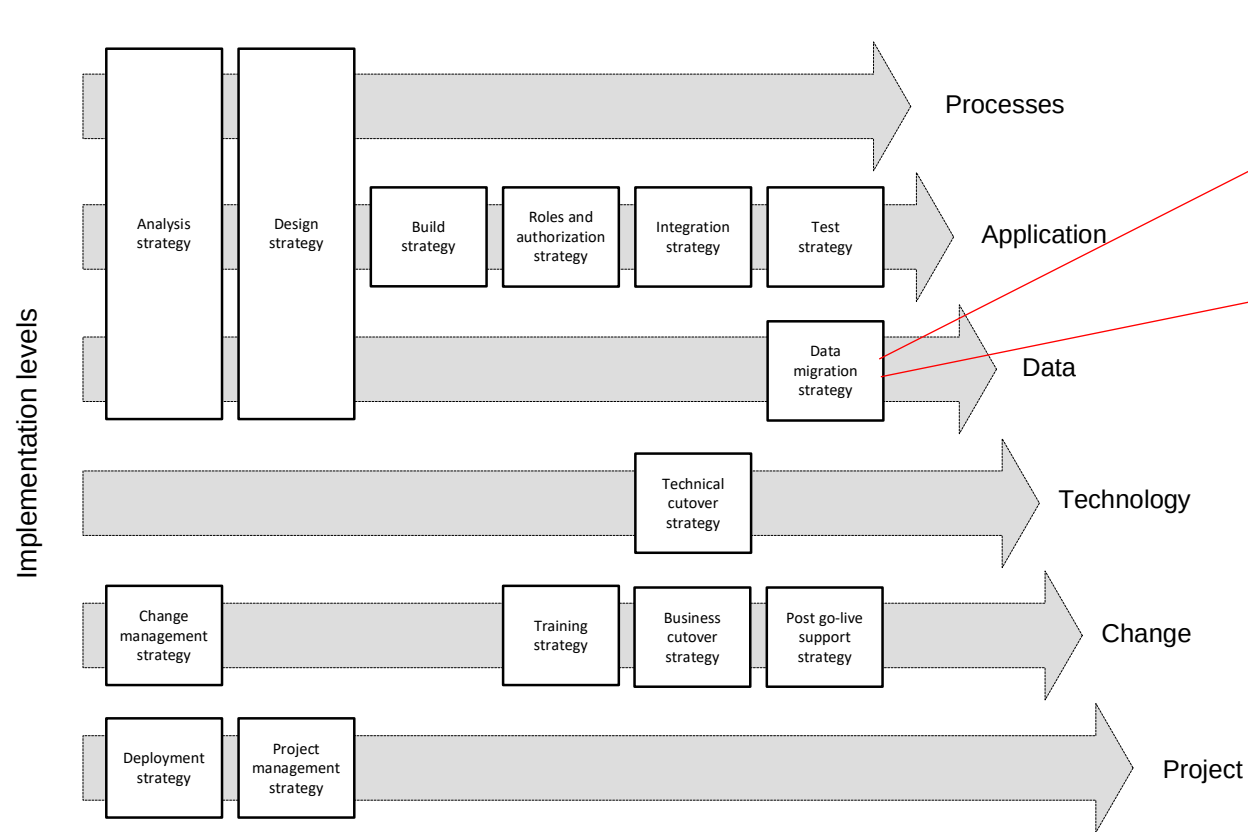
2. Problem statement

The goal of current paper is to analyze applicability of existing bodies of knowledge in complex IT-initiatives, which will allow us to reuse best practices for assessment, deployment and support of corporate information systems.

3. Software lifecycle



4. The theory of corporate information systems



Level	Strategy	Parameter	Possible values
Data	Migration	Organizational structure of the migration team	Functional, matrix
		Number of test migrations	1-3
		%-data uploads for test migration waves	Meaning %-uploads
		The need for early migration of master data	Yes, no
Change	Training	Type of training materials	Operational or process, technical or business
		Type of listeners	Key users, end users
		Training method	By the project team, by the key users
Application	Testing	Types of testing	Unit, integration, acceptance, stress, regression
		Criteria for successful completion of testing	%-passed test scenarios, the number of open critical defects
Change	Business cutover	The need for a company blackout rehearsal	Yes, no
Change	Post go-live support	The level of support at which the project team will work	1-3
		Criteria for the completion of productive support	Number of open critical defects

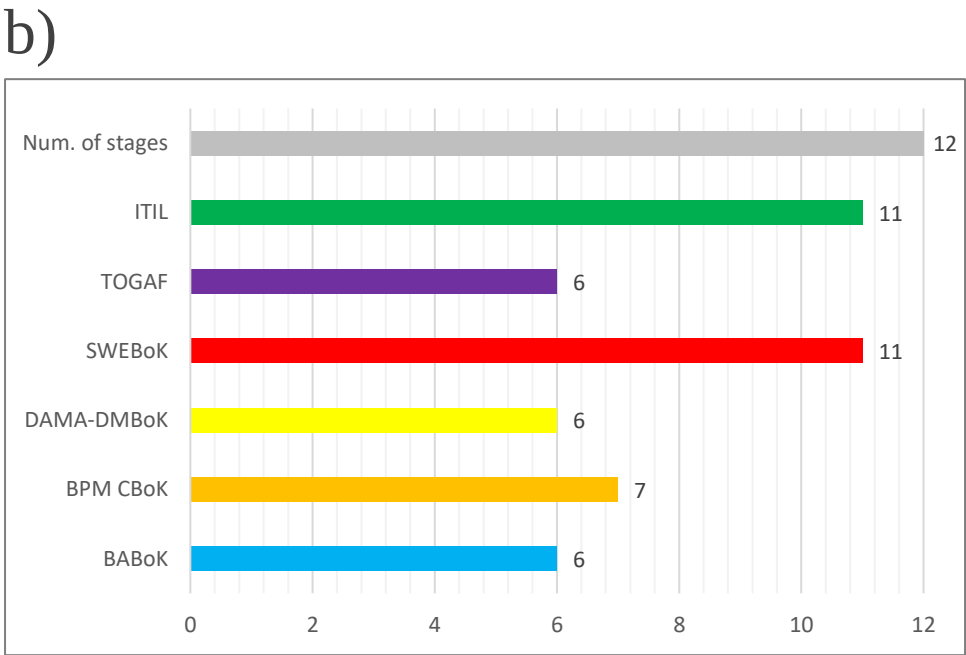
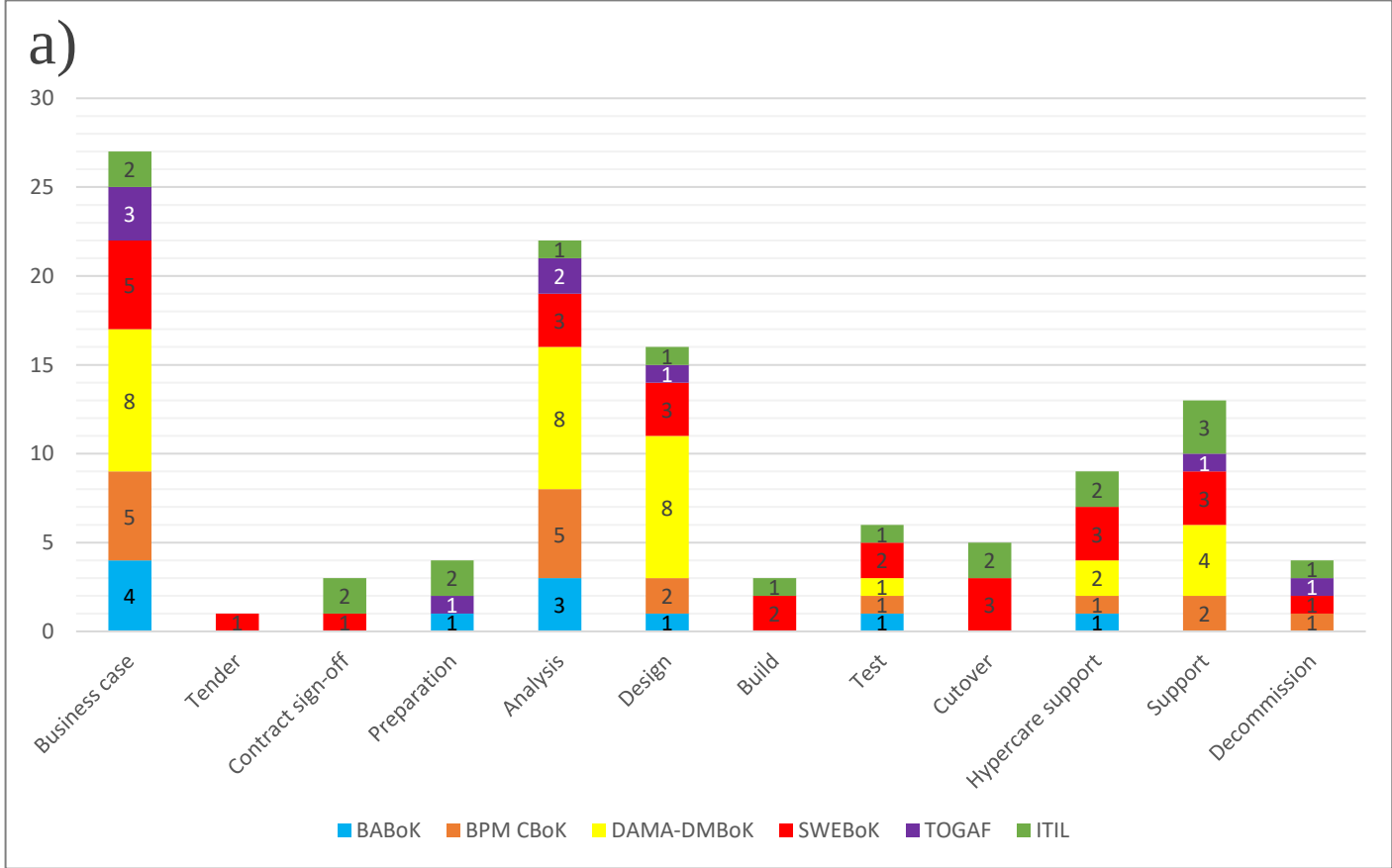
5. Bodies and areas of knowledge

Body of knowledge	Area of knowledge/ stage of work	Description
PMBok (project management)	- Integration; - scope; - resource; - schedule; - cost; - stakeholders; - communication; - risk; - quality; - purchase;	A universal body of knowledge for managing various projects. Basis is PDCA-cycle, which is applied to 10 areas of knowledge [16].
BABok (business analysis)	- Planning and monitoring of business analysis; - identifying requirements; - managing requirements lifecycle; - analysis of strategy; - analyzing requirements and defining design; - evaluating the working solution;	Implementation of business initiatives is considered to achieve company's strategic goals. Several options for performing business activities are provided: before, in parallel and after deployment of corporate information system [17].
BPM CBoK (business processes)	- Business process management; - process modeling; - process analysis; - process design; - process performance measurement; - BPM information technologies; - process transformation; - process-oriented organization and culture; - enterprise process management;	Designing business processes in AS-IS, TO-BE models and eliminating their bottlenecks is complemented by process efficiency assessment, process-oriented corporate culture, the use of BPM-systems and other areas of knowledge [21].
DAMA-DMBoK (data management)	- Data modeling and design; - data storage and operations; - data security; - data integration and interoperability; - metadata; - data quality; - data architecture; - data governance; - document and content management; - transactional and master data; - data warehousing and business intelligence;	Data is considered as a significant asset for organization. Using Peter Aiken's pyramid, state of a company is illustrated from implementation of data-driven software products to the use of best practices for data extraction and analytics [22].
SWEBoK (software engineering)	- Requirements; - architecture; - design; - build; - test; - software engineering operations; - maintenance; - configuration management; - software engineering management; - software engineering process; - software engineering models and methods; - quality; - security; - software engineering economics;	Body of knowledge covering all stages of software lifecycle. It includes 18 areas of knowledge, of which 4 are categorized as Hard and soft skills [23].
EABok/TOGAF (enterprise architecture)	- Preparation (preliminary, architectural vision and requirements management); - architecture development (business, data, application and technical architectures); - implementation planning (solution and implementation planning); - implementation project management (implementation and architecture change);	The methodology for realizing corporate architecture. IT architecture must meet strategic goals and needs of organization. The choice of software solution for deployment depends on the benefits it provides and the reduction of risks [24].
ITIL (IT infrastructure library)	- Key concepts of service management; - four dimensions for service management; - ITIL service quality assessment system; - ITIL management practices (general and service management, technical).	Best practices and recommendations for managing services to implement, support and develop information technologies [25].

Similar domains of knowledge in them: requirements, quality and project management

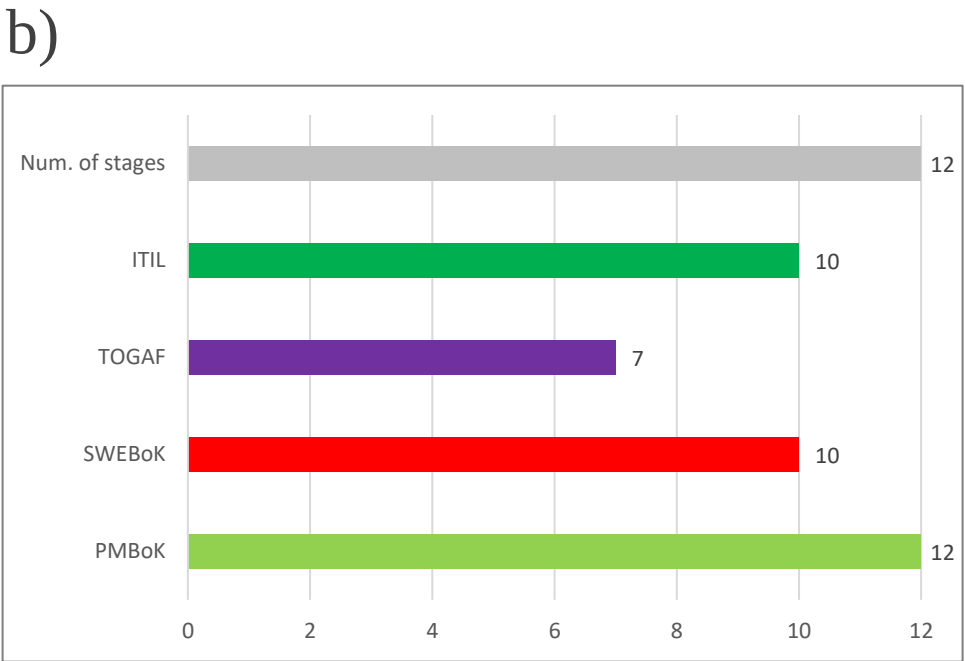
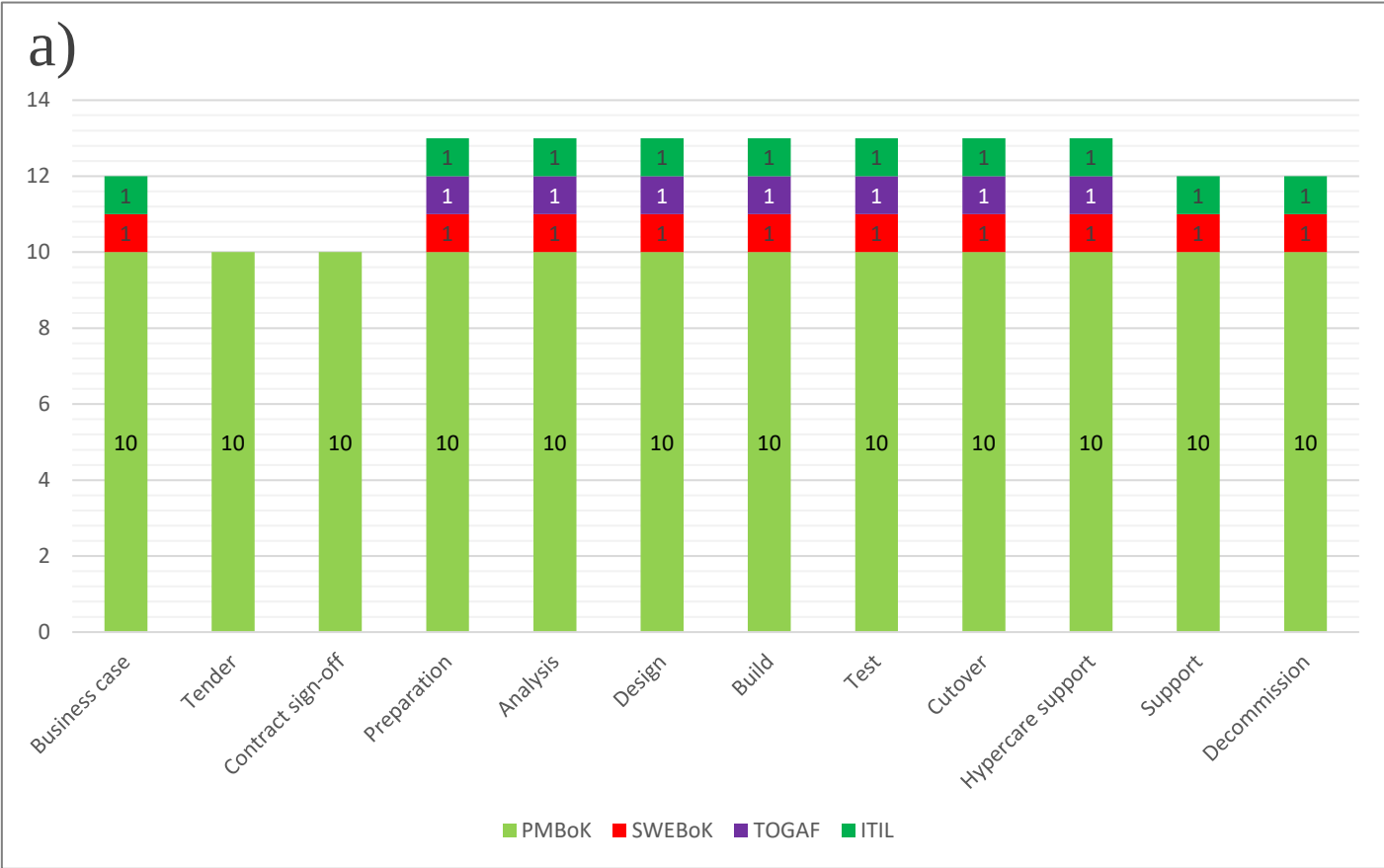
6. Mapping stages of software lifecycle and areas of knowledge (1 of 2)

Results of mapping all areas of knowledge except project management:
a) stages vs. number of relevant areas; b) the bodies vs. quantity of covered stages



6. Mapping stages of software lifecycle and areas of knowledge (2 of 2)

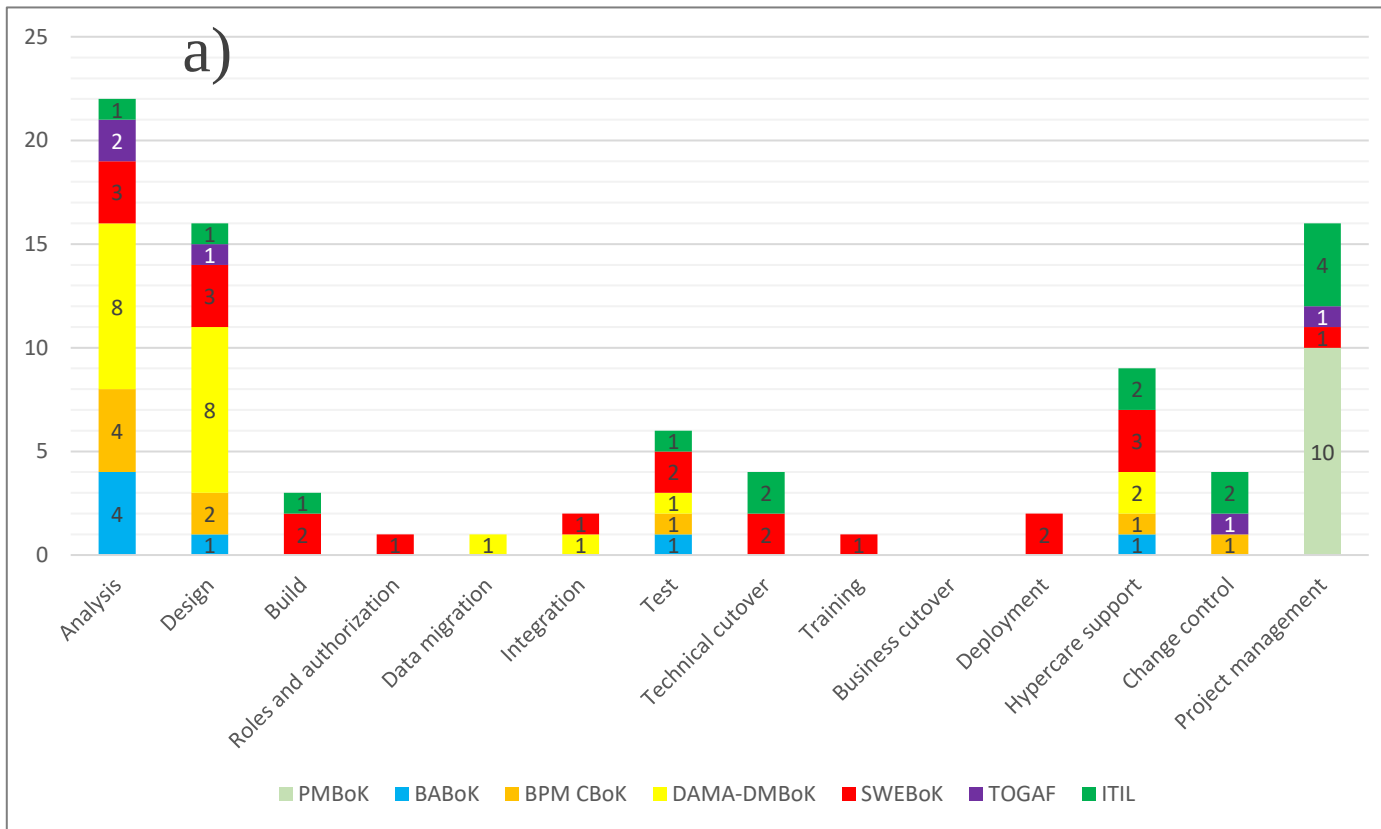
Results of mapping areas of knowledge related to project management:
a) stages vs. number of relevant areas; b) the bodies vs. quantity of covered stages



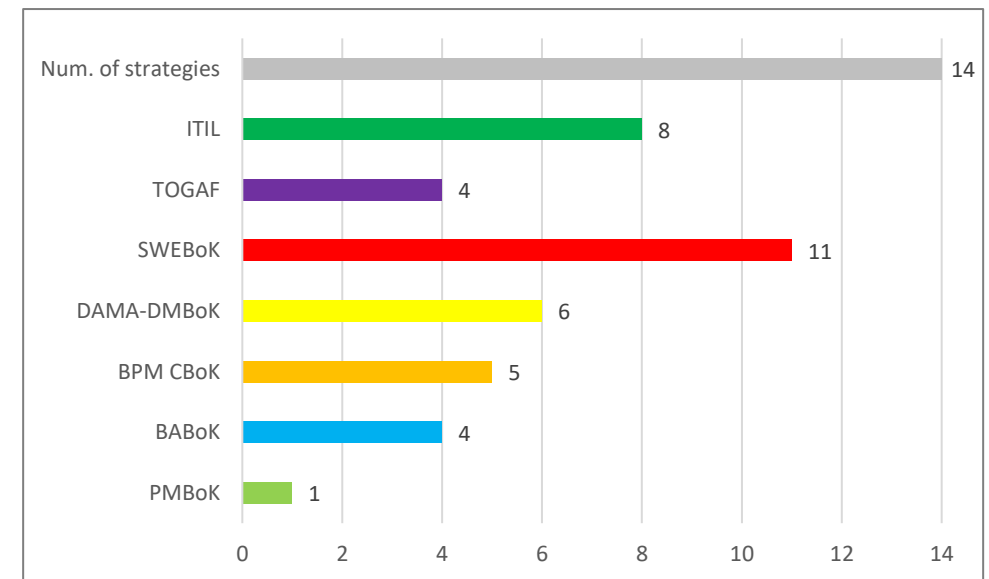
7. Mapping strategies from the theory and areas of knowledge

Results of mapping all areas of knowledge:

a) strategies vs. number of relevant areas; b) the bodies vs. quantity of covered strategies



b)



8. Conclusions

Variety of information about corporate information systems presented in reviewed bodies of knowledge allows us to look at the problem from different perspectives. So

- BPM CBoK focuses on business process management, as its name suggests;
- DAMA-DMBoK pays attention to data management, which is considered a key asset for companies;
- SWEBoK provides approaches and methods for solving practical problems that arise throughout software lifecycle,

taking into account the above

- TOGAF unites processes, data and applications, supplementing them with a technical component, which allows to operate IT-architecture, consisting of these elements;
- ITIL knowledge library defines IT-initiative, which can include not only software but also other IT-related tasks;
- In contrast, BABoK considers any business initiative, not limited to IT and software.

Problems of project management are discussed in bodies of knowledge following bottom-up approach:

- there is a single domain of knowledge that allows to manage project for architecture, software and other IT-initiatives in TOGAF, SWEBoK and ITIL respectively;
- on the contrary, all areas of knowledge in PMBoK are universal and applicable to various projects, not just IT.

Mapping bodies of knowledge to stages of software lifecycle showed 100% coverage, indicating that activities of pre-implementation, implementation and post-implementation regard corporate information systems are covered in detail in these knowledge libraries, particularly PMBoK, SWEBoK and ITIL. However, a detailed comparison of strategies from the theory of corporate information systems and areas of knowledge revealed that 7% of typical issues, regarding business cutover, that arise during deployment project are not covered by any of the bodies. The best result was demonstrated by SWEBoK, which ensured that 79% of project problems were fully addressed.

Thank you!

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