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Portfolio, Program and Project Management Using COBIT 5

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Many organizations attribute their success to being able to execute their strategic goals and objectives. Execution will be successful if it is measured and if corrective actions are taken at appropriate times when there are deviations. Thus, there has to be a plan that should enable measurement, help track progress and enable corrective action to be taken at the right time to keep the execution on track. One such tool that enables the organization to track its execution is a portfolio/program/project management tool.

A program is group of projects that are working toward achieving one goal. Among the skills that every organization requires, program and project management skills are important and find pride of place. Successful project management requires adoption of a structured approach to deal with projects, programs and portfolios. Hence, it is important for the organization to establish the practice of portfolio/program/project management and provide it with top management support. Establishment of a portfolio/program/project practice will enable the organization to reduce, if not eliminate, unsuccessful projects that cost organizations dearly in terms of time, expense and quality of deliverables meeting stakeholders' expectations.

Organizations can learn from the experiences of other organizations in different industries, so it would be useful for organizations to adopt globally accepted best practices in the form of a defined organizational framework for program and project management. An ideal framework would be one based on the Project Management Institute's (PMI) *A Guide to the Project Management Body of Knowledge* (*PMBOK Guide*) or Projects in Controlled Environments (PRINCE2) version 2.

As technology pervades every sphere of activity in life, businesses, too, are heavily dependent on leveraging technology to capture their customers' attention. Increasing dependency on information and related technology requires an organization to initiate and execute various programs for adopting and leveraging technology-based solutions. The portfolio of IT-related programs and projects is becoming larger. Considering the investment in IT solutions, it is appropriate for organizations to adopt IT governance practices based on the International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) ISO/IEC 38500 *Information technology—Governance of IT for the organization* standard, using COBIT® 5 as a framework.

This article has mentioned 2 standards already, and a couple of questions come to mind: Should organizations need to adopt many standards? Can COBIT 5 help program and project management frameworks? Since the *PMBOK Guide* is a widely accepted knowledge base that is used by organizations, mapping its structure with COBIT 5 provides an answer to these questions. This article provides direction on how to map COBIT 5 with the *PMBOK Guide* knowledge base by describing PMI's *PMBOK Guide* and COBIT 5, then comparing both.

PMI's Knowledge Base

PMI has done research in the practices of program and project management and *PMBOK Guide* has become a *de facto* industry standard. Typically, organizations use standards published by PMI to define a portfolio, program and project management framework (**figure 1**).

Figure 1—PMI Publications

Name of Publication
A Guide to the Project Management Body of Knowledge 5th Edition
The Standard for Program Management 3rd Edition
The Standard for Portfolio Management 3rd Edition
Organizational Project Management Maturity Model (OPM3) 3rd Edition

Each of these publications focuses on providing knowledge and guidance on specific aspects of the project management framework and helps the reader to understand the intricacies of portfolio, program and project management. *PMBOK Guide* describes 47 processes for project management, grouped in 5 process groups, illustrated in **figure 2**.

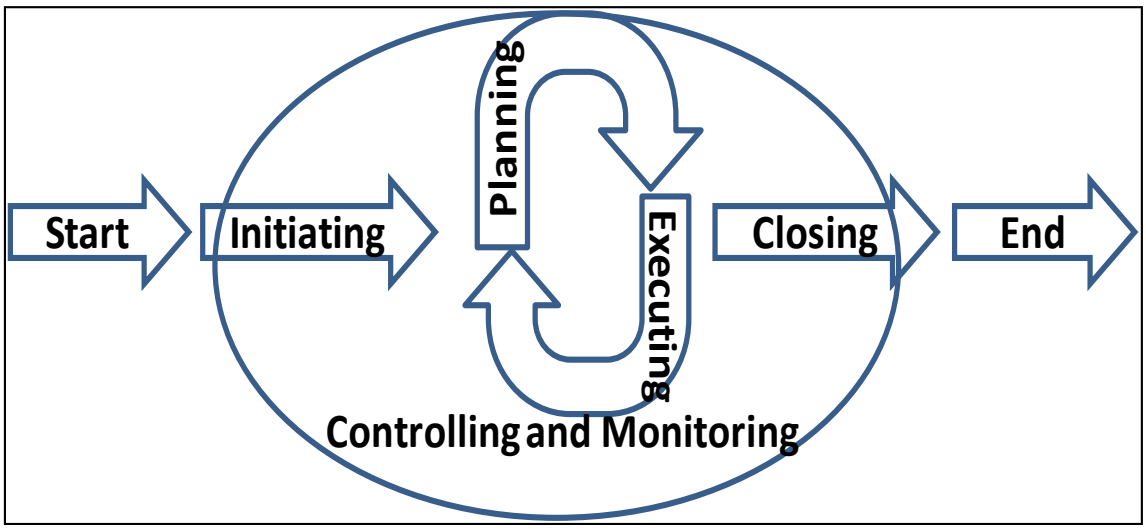
Figure 2—*PMBOK Guide* Process Groups

Process Group	Description
Initiating	Processes for initiating a project
Planning	Processes for planning a project
Executing	Processes for executing project
Controlling and Monitoring	Processes for controlling and monitoring progress of project. Typically works iteratively with the executing process group.
Closing	Processes for closing and documenting lessons learned

Source: Excerpted from PMI, *A Guide to the Project Management Body of Knowledge 5th Edition*, p. 49

The relationship of these process groups with the project management life cycle is depicted in **figure 3**.

Figure 3—Project Management Life Cycle (From *PMBOK Guide*)



Source: Adapted from from PMI, *A Guide to the Project Management Body of Knowledge 5th Edition*, p. 50

The list of processes in each process group is shown in **figure 4**.

Figure 4—Process Groups and Processes

Process Groups				
Initiating	**Planning**	**Executing**	**Controlling**	**Closing**
1. Develop Project Charter	1. Develop Project Management Plan	1. Direct and Manage Project Execution	1. Monitor and Control Project Work	1. Close Project or Phase
2. Identify Stakeholders	2. Plan Scope Management	2.Perform Quality Assurance	2. Perform Integration Change Control	2. Close Procurements
	3. Collect requirements	3. Acquire Project Team	4. Verify Scope	
	4. Define Scope	4.Development Project Team	5. Control Scope	
	5. Create Work Breakdown Structure (WBS)	5. Manage Project Team	6. Control Schedule	
	6. Plan Schedule Management	6. Manage Communications	7. Control Cost	
	7. Define Activities Definition	7. Conduct Procurements	8. Control Quality	
	8. Sequence Activities	8. Manage Stakeholder Engagement	9. Control Communications	
	9. Estimate Activity Resources		10. Control Risk	
	10. Estimate Activity Durations		11. Control Procurements	
	11. Develop Schedule		12. Control Stakeholder Engagement	
	12 Plan Cost Management			
	13. Estimate Cost			
	14. Determine Budget			
	15. Plan Quality Management			

Process Groups				
Initiating	**Planning**	**Executing**	**Controlling**	**Closing**
	16. Plan Human Resources Management 17. Plan Communications Management 18. Plan Risk Management 19. Identify Risk 20. Perform Qualitative Risk Analysis 21. Perform Quantitative Risk Analysis 22. Plan Risk Responses 23. Plan Procurements Management 24. Plan Stakeholder Management			

The processes are also grouped into 10 knowledge areas as described in **figure 5**.

Figure 5—Knowledge Areas and Associated Processes

Knowledge Areas	Processes					
Integration	Develop Project Charter	Develop Project Management Plan	Direct and Manage Project Execution	Monitor and Control Project Work	Perform Integration Change Control	Close Project or Phase
Scope	Plan Scope Management	Collect Requirements	Create Work Breakdown Structure	Define Scope	Verify Scope	Control Scope
Time	Plan Schedule Management	Define Activities Definition and Sequence Activities	Estimate Activity Resources	Estimate Activity Durations	Develop Schedule	Control Schedule

Knowledge Areas	Processes					
Cost	Plan Cost Management	Estimate Cost and Determine Budget	Control Cost			
Quality	Plan Quality Management	Perform Quality Assurance	Control Quality			
Human Resources	Plan Human Resources Management	Acquire Project Team	Development Project Team	Manage Project Team		
Communications	Plan Communications Management	Manage Communications	Control Communications			
Risk	Plan Risk Management	Identify Risk	Perform Qualitative Risk Analysis	Perform Quantitative Risk Analysis	Plan Risk Responses	Control Risk
Procurement	Plan Procurements Management	Conduct Procurements	Control Procurements	Close Procurements		

Figure 6 describes the relationship of project, program and portfolio management required at the organization level.

Figure 6—Project Management at the Organization Level

	Projects	Program	Portfolio
Scope	Projects have defined objectives. Scope is progressively elaborated throughout the project life cycle.	Programs have a larger scope and provide more significant benefits.	Portfolios have an organizational scope that changes with the strategic objectives of the organization.
Change	Project managers expect change and implement processes to keep change managed and controlled.	Program managers expect change from both inside and outside the program and are prepared to manage it.	Portfolio managers continuously monitor changes in the broader internal and external environment.
Planning	Project managers progressively elaborate high-level information into detailed plans	Program managers develop the overall program plan and create high-level plans to guide	Portfolio managers create and maintain necessary processes and communication relative to the

	throughout the project life cycle.	detailed planning at the component level.	aggregate portfolio.
Management	Project managers manage the project team to meet the objectives.	Program managers manage the program staff and project managers. They provide vision and leadership.	Portfolio managers manage or coordinate portfolio staff (or program/project staff) responsible for the aggregate portfolio.
Success	Success is measured by product and project quality, timeliness, budget compliance and degree of customer satisfaction.	Success is measured by the degree to which the program satisfies the needs and benefits for which it was undertaken.	Success is measured in terms of the aggregate investment performance and benefit realization of the portfolio.
Monitoring	Project managers monitor and control the deliverables of the project as per objectives.	Program managers monitor the progress of program components to ensure that the overall goals, schedule, budget and benefits shall be met.	Portfolio managers monitor strategic changes and aggregate resource allocation, performance results and risk of the portfolio.

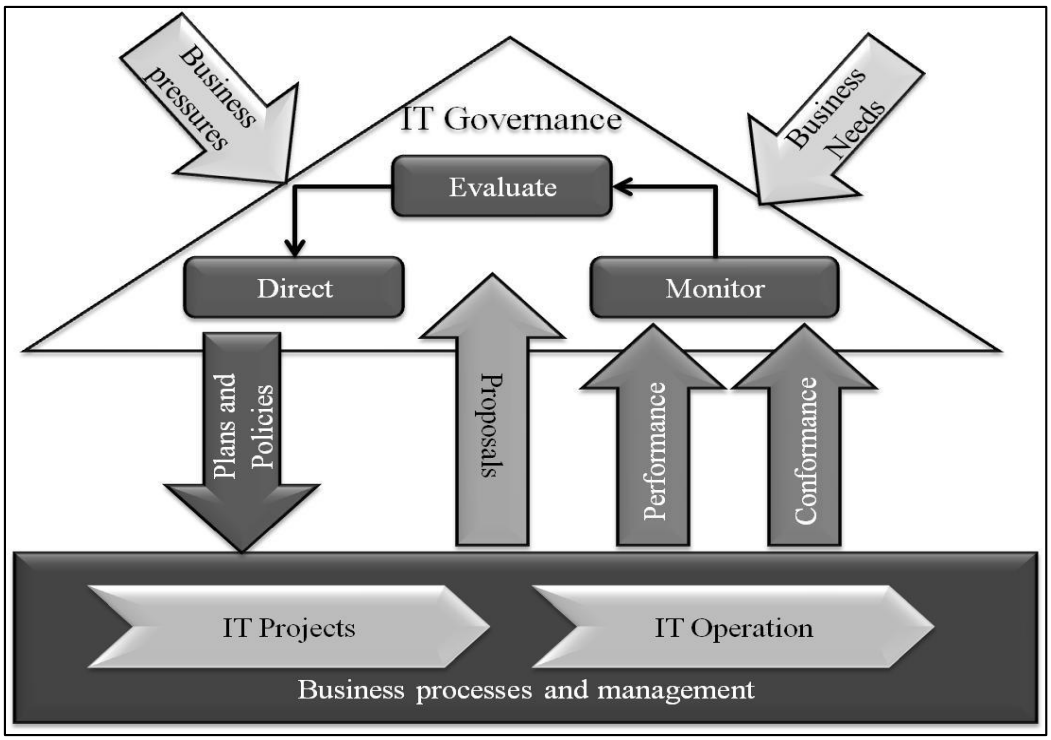
Source: Adapted from PMI, *A Guide to the Project Management Body of Knowledge 5th Edition*, p. 8

The PMI standards and body of knowledge describe the processes and activities in detail in the publications mentioned earlier.

Mapping With COBIT 5

COBIT 5 is a comprehensive IT governance framework. Project management is a subset of overall IT governance. **Figure 7** shows the overall framework of IT governance.

Figure 7—ISO/IEC 38500:2008 IT Governance Model



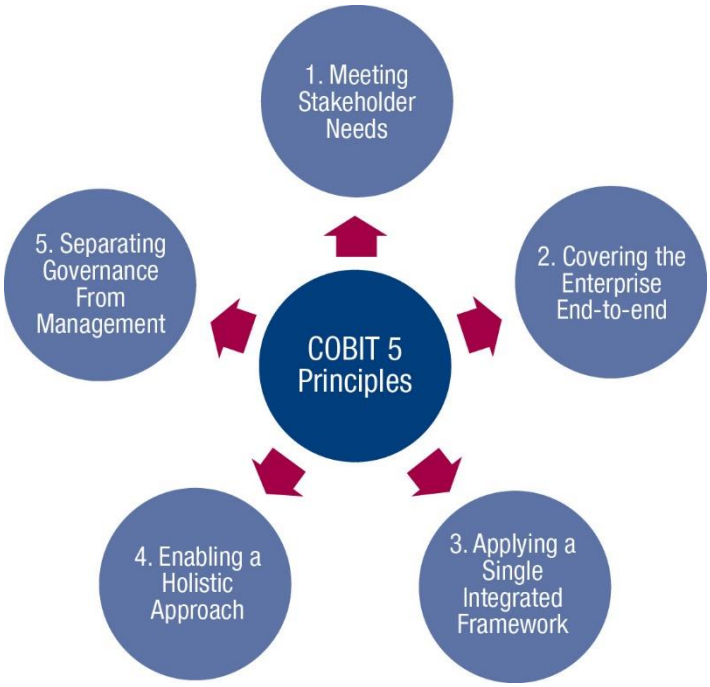
Source: Adapted from International Organization for Standardization ISO 38500

COBIT 5 can be used as a benchmark for reviewing and implementing governance and management of enterprise IT. It has a set of 5 principles and 7 enablers that are the building blocks of the framework. These principles and enablers make COBIT 5 an effective tool for implementing governance of enterprise IT (GEIT) and help enterprises in various ways, such as simplifying complex issues, delivering trust and value, managing risk, reducing potential public embarrassment, protecting intellectual property, and maximizing opportunities.

The 5 principles of COBIT 5 (**figure 8**) are applicable to program and project management:

1. **Meeting stakeholder needs**—The programs and projects are part of enterprise ecosystems and are initiated considering stakeholder needs from the enterprise.
2. **Covering enterprise end-to-end**—The program and project management framework is common for the entire enterprise, including IT. COBIT 5 is also a framework that covers enterprise IT.
3. **Applying a single integrated framework**—COBIT 5 addresses program and project management.
4. **Enabling a holistic approach**—This principle covers 7 enablers, including governance resources and management resources, which are also part of the program and project management framework.
5. **Separating governance from management**—This helps in differentiating portfolio management, which is more a governance function, from program and project management, which are more operational.

Figure 8—Five Principles of COBIT 5

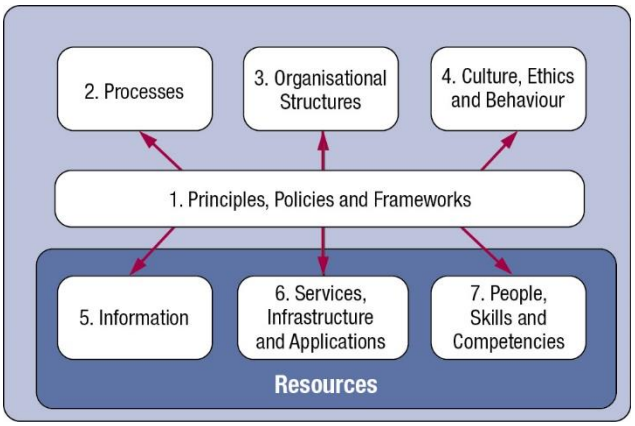


Source: ISACA, COBIT 5, USA, 2012

The 7 enablers of COBIT 5 are also associated with the program and project management (**figure 9**):

- **Principles, policies and frameworks**—Organizations need to define policies, procedures and guidelines for program and project management based on the organizations' principles.
- **Processes**—COBIT 5 defines 37 generic processes. Although process BAI01 Manage programs and projects is directly associated with program and project management, there are other processes also required for establishing a framework.
- **Organizational structures**—This refers to the key decision-making entities in an enterprise, including portfolio, program and project management.
- **Culture, ethics and behavior**—The culture, ethics and behavior of individuals and of the enterprise are very often underestimated as a success factor in governance and management activities.
- **Information**—It is pervasive throughout any organization and includes all information produced and used by the enterprise. Information is required for keeping the organization running and well governed, including portfolio, program and project management.
- **Services, infrastructure and applications**—These include the infrastructure, technology and applications that are required for executing projects, and often projects' outcomes generate services and applications that shall be hosted for the benefit of organizations.
- **People, skills and competencies**—These are linked to people and are required for the successful completion of programs and projects.

Figure 9—Seven Enablers of Governance



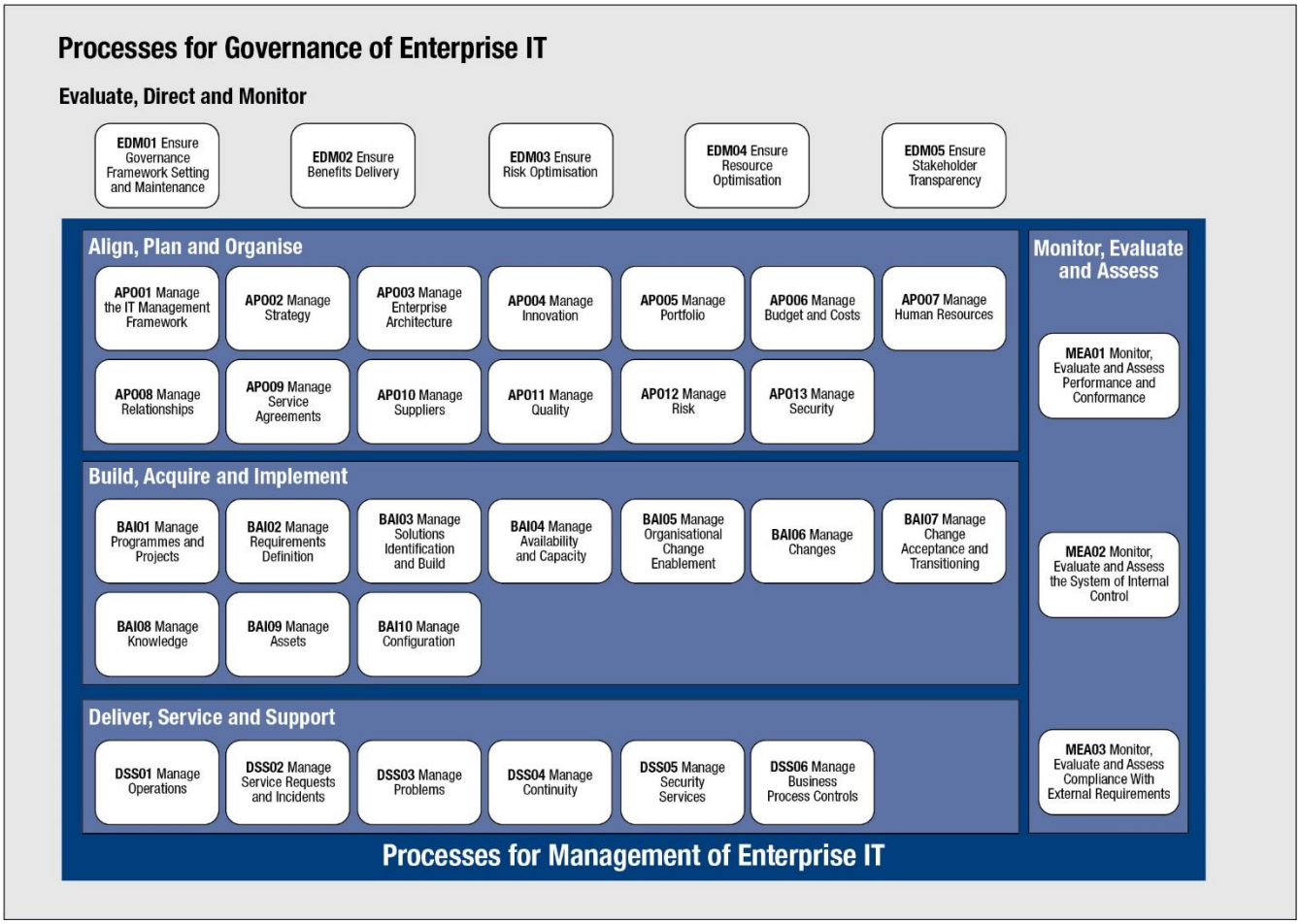
Source: ISACA, COBIT 5, USA, 2012

COBIT 5 Process Reference Model

COBIT 5 contains a process reference model (**figure 10**) consisting of 37 generic processes required for the governance and management of enterprise IT. These processes are organized in 5 groups:

1. Evaluate Direct and Monitor (EDM)
2. Align, Plan and Organize (APO)
3. Build, Acquire and Implement (BAI)
4. Deliver, Service and Support (DSS)
5. Monitor, Evaluate and Assess (MEA)

Figure 10—COBIT 5 Process Reference Model



Source: ISACA, COBIT 5, USA, 2012

These processes are described in detail in *COBIT® 5: Enabling Processes*. The COBIT 5 process reference model subdivides the IT-related practices and activities of the enterprise into 2 main areas—governance and management—with management further divided into domains of processes:

- The governance domain contains 5 governance processes. Within each process, Evaluate, Direct and Monitor (EDM) practices are defined.
- The management domains are in line with the responsibility areas of Plan, Build, Run and Monitor (PBRM).

COBIT 5: Enabling Processes consists of:

- A process description, which describes the process function
- A process purpose statement, which describes the objectives of the process
- IT-related goals, which are applicable for the process and are derived from business goals. Each IT-related goal is associated with a set of generic measurement metrics for measuring performance.
- Process goals, which are derived from process goals cascaded from IT and business goals. Each process goal is associated with or related to a set of generic metrics.
- Each process contains a set of management practices that may be considered as subprocesses. These are associated with a generic responsible, accountable, consulted and informed (RACI) chart. The RACI charts of COBIT 5 use functional descriptions to define generic positions. Organizations should customize these to reflect the positions preidentified in their own organization chart.
- Each management practice contains a set of inputs and outputs required for the process and associated with a set of activities.

Governance processes are common across the organization and are applicable for portfolio, program and project management areas. From other process groups (excluding BAI01), other processes are partially applicable for program and project management.

Mapping COBIT 5 and PMI Standards

Although it may not be possible to cover an entire mapping in the scope of this article, the following approach has been adopted to carry out mapping. The steps to be followed for mapping are:

1. Identify the processes from the COBIT 5 process reference model that are required for portfolio, program and project management. This can be done by looking into the activities defined by the different processes.
2. Identify the matching activities from the PMI standards (**figure 1**) for portfolio, program and project management.
3. Map these activities with the activities of the identified COBIT® processes.
4. Identify work products (input and output).
5. Prepare a RACI chart for each.
6. Identify gaps, i.e., activities of PMI that do not match with COBIT 5 and COBIT 5 activities that do not have a matching activity in the PMI standards.

This approach will help ensure that all activities defined by PMI standards are getting mapped within COBIT 5. A word of caution: These frameworks need to be adapted to the organization's ways of working, which are dictated by its customers' needs. Care must be taken to not let the framework jeopardize business.

Conclusion

Mapping of COBIT 5 with PMI standards is useful in providing assurance that the COBIT 5 framework can be used as an "single integrated framework" across organizations. This is an initial article; more will follow as different processes are mapped.

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