ASP4134 - Audit Sistem Informasi
(week 2)

Confidential. Terbatas untuk mahasiswa PKN STAN

AGENDA

- Lecture IT governance audits
- Pair discussion (2 people per group, but don’t choose someone beside you)

ASP4134 - Audit Sistem Informasi

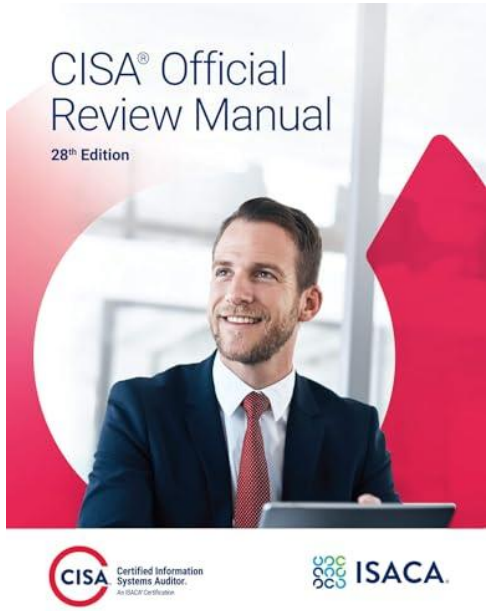
Key objectives:

1. memahami kerangka **konsep audit tata kelola** teknologi informasi berdasarkan standar tata Kelola
2. menyusun **program audit tata kelola** sistem informasi
3. menyusun **laporan audit tata kelola** sistem informasi

Here we are

4. melaksanakan **pengauditan atas pengoperasian dan pemeliharaan** atas sistem informasi
5. melakukan **audit atas perolehan, pengembangan, dan implementasi sistem informasi**
6. melakukan **pengauditan atas keamanan informasi**
7. menggunakan **Teknik Audit Berbantuan Komputer** dalam pengujian pengendalian dan pengujian substantif
8. menjelaskan dampak kelemahan **pengendalian umum dan pengendalian aplikasi** terhadap peluang terjadinya kecurangan dan kesalahan saji pada laporan keuangan

Referensi

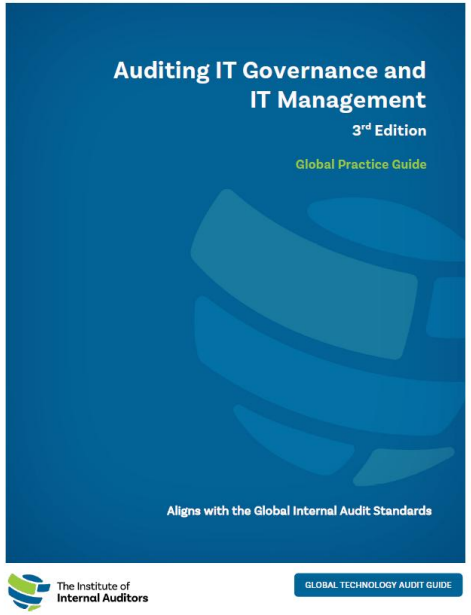


1

Useful references for this topic

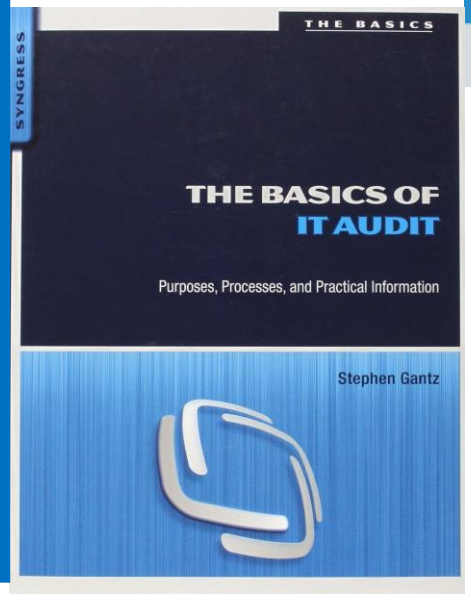
2

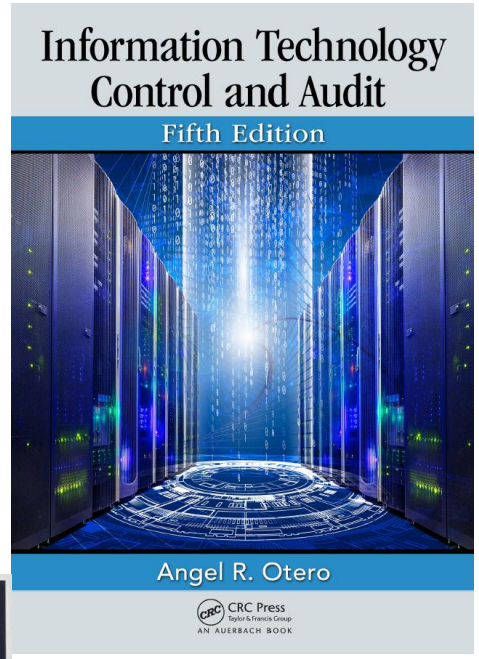




3

4





5

Last Week Recap

IS audit: Systematic and independent formal **examination** and **evaluation** of an organization's **information technology** policies, infrastructure, and operations.

IS consists of people, process, and technology aspects, while IT focuses on the technology aspect.

Audit steps: planning – fieldwork – reporting and communication – follow up

IS audit evidence must link directly to risks and controls

The goal is not only to find problems but to help improve governance and accountability

IT Governance Auditing

ASP4134 - Audit Sistem Informasi

IT Governance



“IT Governance ensures that IT supports and extends the organization’s strategies and objectives.”
It focuses on value delivery, risk management, performance measurement, and resource optimization.

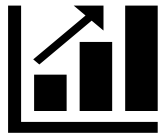


IT Governance is about how technology decisions and activities are guided and monitored so that IT supports the organization’s goals.

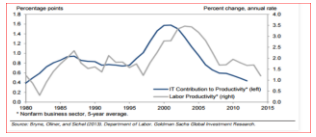
IT Governance = making sure IT does the right things, the right way, for the right reasons.

Urgency of IT Governance

IT *as Business Enabler*



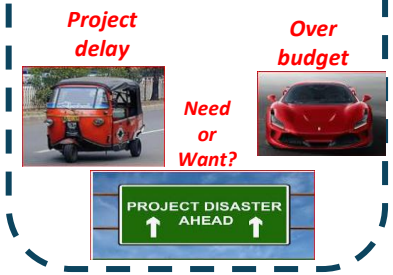
IT *Productivity Paradox*



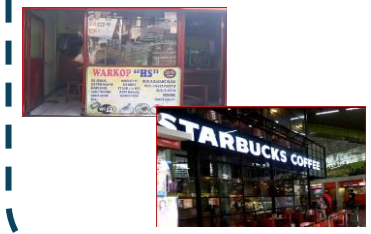
Business Alignment



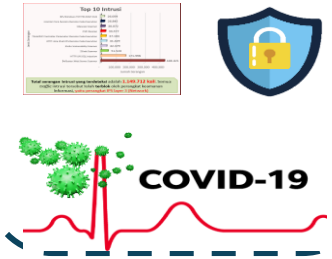
IT *Project Failures*



IT *Service Performance*

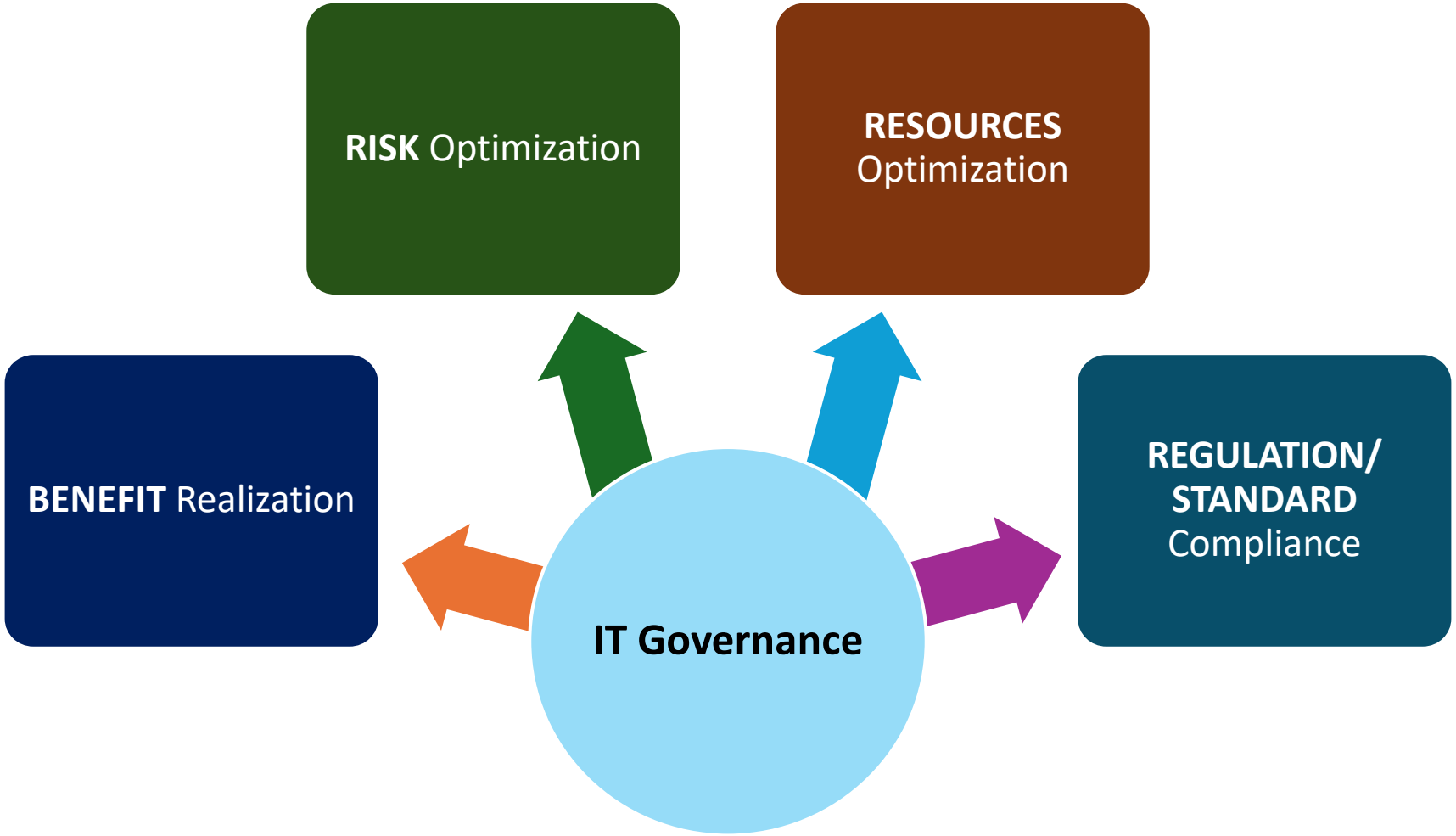


IT *Security & Continuity*



Good IT Governance is necessary

Good IT Govenance?



IT Governance in Real Life

A government agency create several systems to ensure that financial data across Indonesia, from regional offices to headquarters, is accurate, integrated, and timely.

Over the past few years, the agency launched several digital transformation projects:

1. A new financial reporting system.
2. A data warehouse for analytics.
3. An employee self-service portal.

However, after three years, none of the projects are fully operational.

IT Governance in Real Life

An internal review found:

1. No clear ownership: each project runs separately with no central coordination.
2. Frequent scope changes: systems are redesigned mid-project due to unclear requirements.
3. Overlapping systems: different units build similar applications for the same function.
4. Lack of performance monitoring: no KPIs to measure project success.
5. No structured IT governance framework: IT decisions are made ad hoc.

Meanwhile, the agency keeps investing heavily in IT infrastructure, but the benefits are not visible.

IT Governance is Like Managing a Public Transportation System



Imagine your organization is like a city, and IT is the transportation system that keeps the city running: buses, trains, schedules, routes, fuel, drivers, traffic signals.

But who makes sure the transportation system:

- supports the city's goals?
- uses budget wisely?
- operates safely?
- delivers real value?
- is reliable and not chaotic?

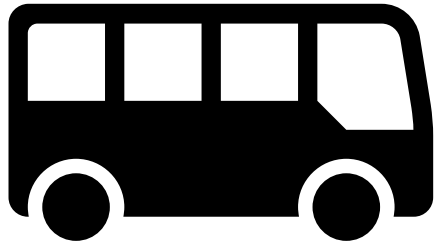
That's the role of IT governance.

Image source: mobisoftinfotech.com

Strategic Alignment = Deciding Which Routes the City Needs

A transportation system must serve the city's needs:

- Which areas need more buses?
- Where is traffic high?
- Where should new routes be added?



In IT governance:

IT projects must support the organization's strategy, not just "cool technology."

You don't buy 100 new buses if the city actually needs a railway upgrade.

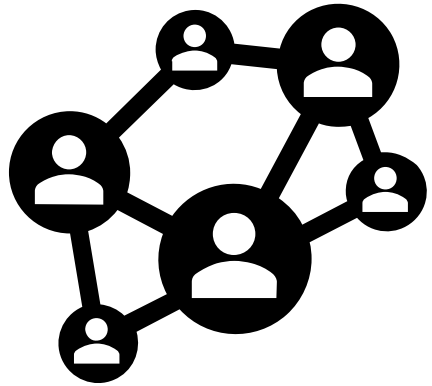
IT governance ensures IT moves the organization in the right direction.

Resource Optimization = Using Drivers, Buses, and Fuel Efficiently

Imagine if:

- Three units buy buses separately.
- Some routes have too many buses, others too few.
- Fuel is wasted because of poor scheduling.

That would be inefficient.



In IT governance, you ensure:

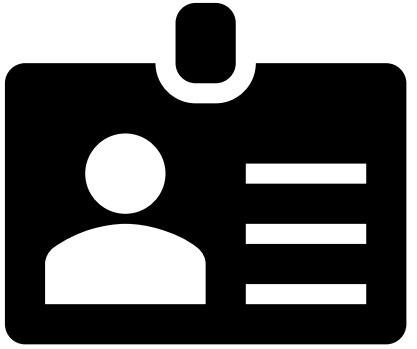
- No duplicate systems.
- IT budget is spent wisely.
- Skilled IT staff are assigned effectively.
- Infrastructure is shared when possible.

Governance makes sure resources are used wisely and not wasted.

Risk Optimization = Preventing Accidents and Breakdowns

In a transport system:

- You check brakes regularly.
- You train drivers (and ensure they have driving license)
- You monitor traffic conditions.
- You prevent collisions.



In IT governance, you manage IT risks like:

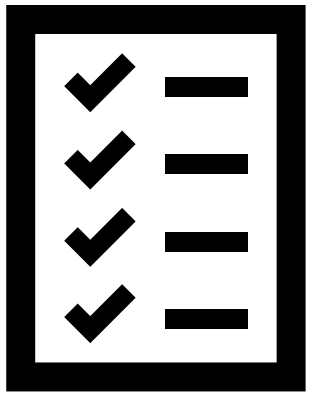
- cyberattacks
- system downtime
- data loss
- project failures

Governance prevents IT “accidents” that can harm the organization.

Performance Monitoring = Checking If the System Works

A city needs dashboards:

- On-time arrival rate
- Passenger satisfaction
- Fuel usage
- Breakdown statistics



In IT governance, you monitor:

- system uptime
- project progress
- IT service quality
- budget usage
- benefits realization

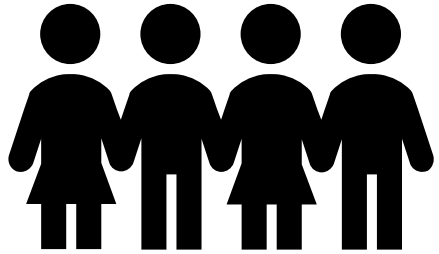
What gets measured gets improved. Governance ensures IT is performing.

Decision Rights & Accountability = Knowing Who Is the Mayor, Who Are the Managers, Who Are the Drivers

If nobody knows:

- who decides new routes,
- who approves purchases,
- who handles accidents,
- who reviews performance…

The transportation system becomes chaos.



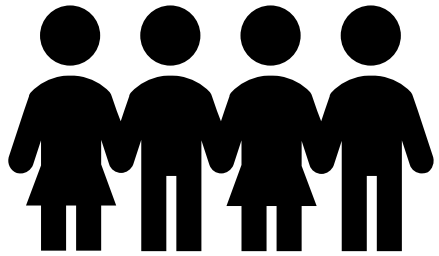
In IT governance, you clearly define:

- who approves IT projects
- who sets priorities
- who owns the systems
- who is accountable for results

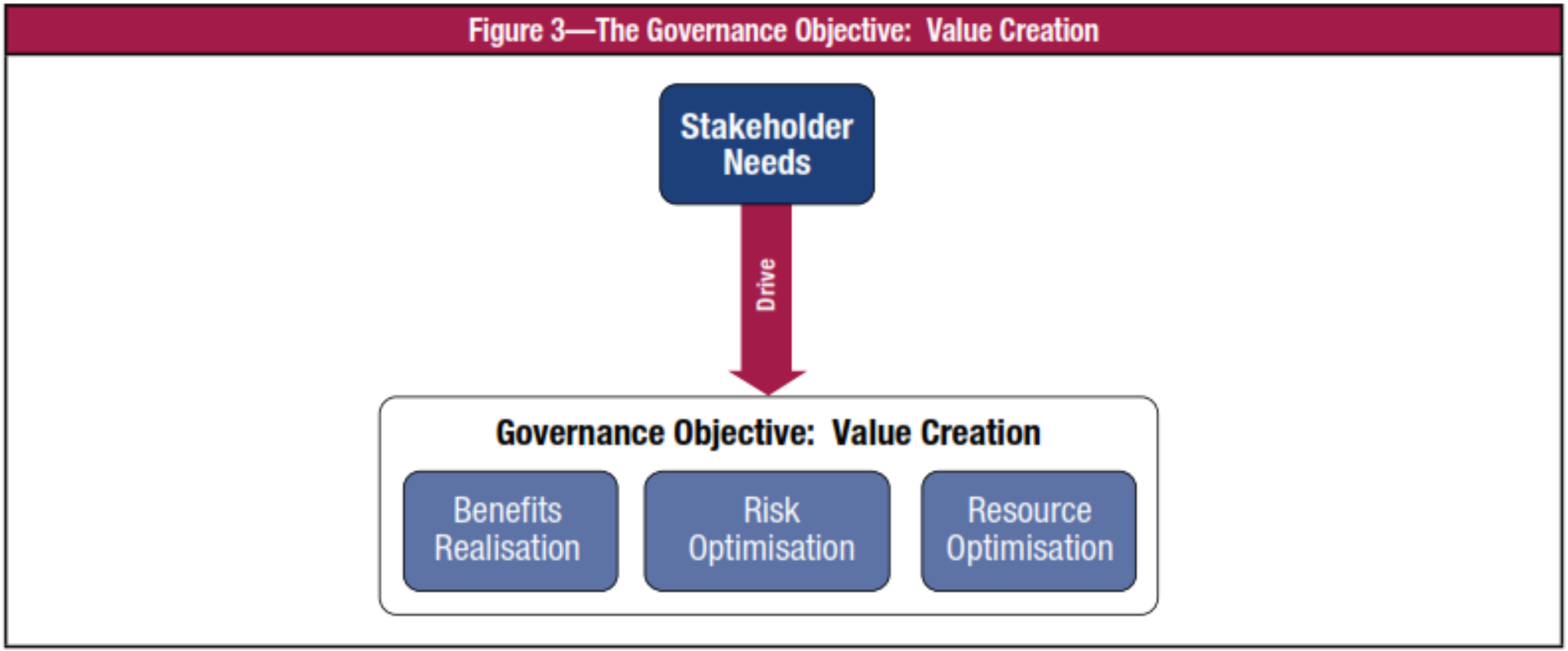
Governance clarifies roles so IT decisions are coordinated and responsible.

To summarize

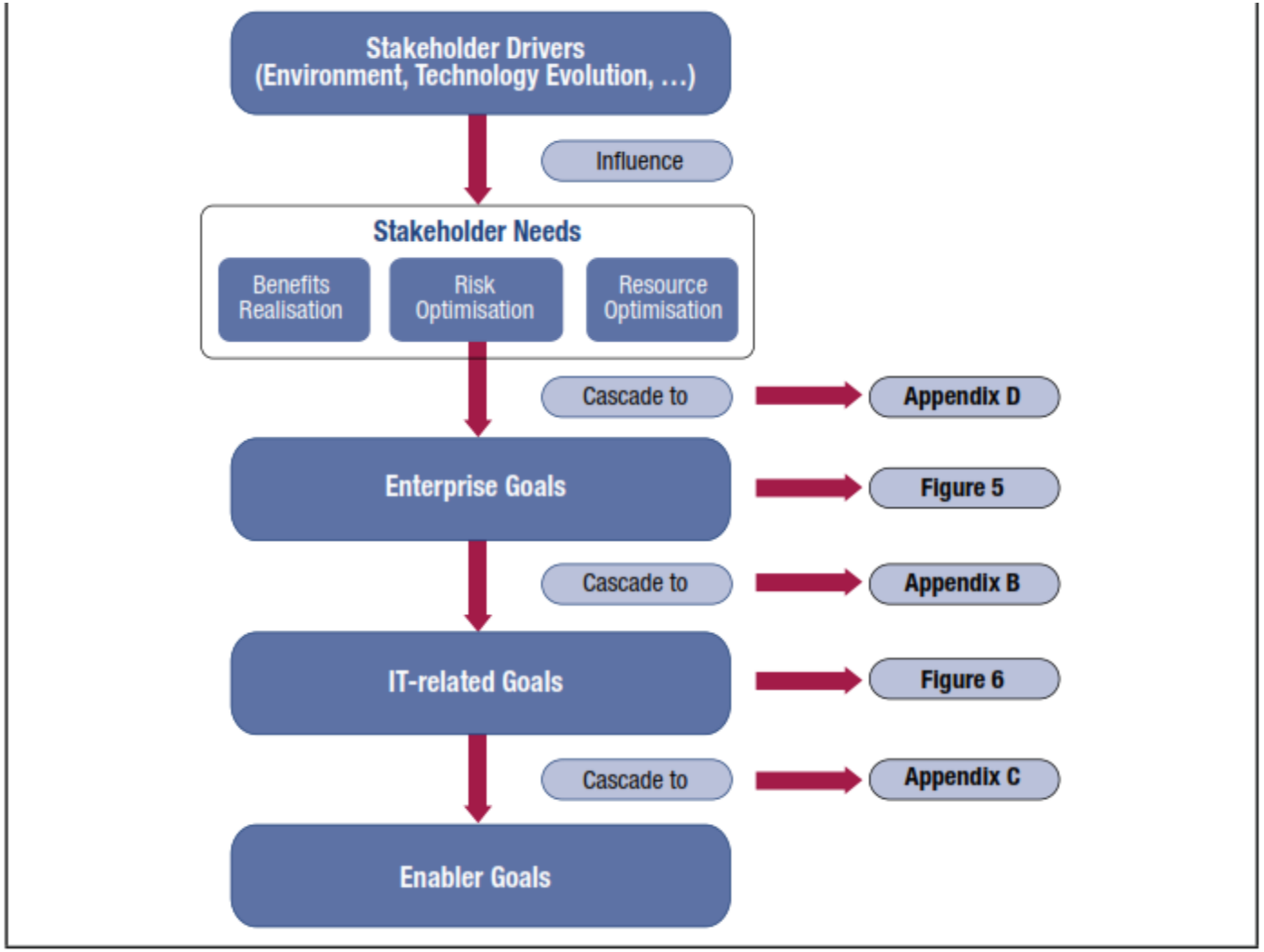
IT Governance is how an organization directs, controls, and ensures that IT supports its goals, uses resources wisely, manages risks, and delivers value; just like how a city governs its transportation system.



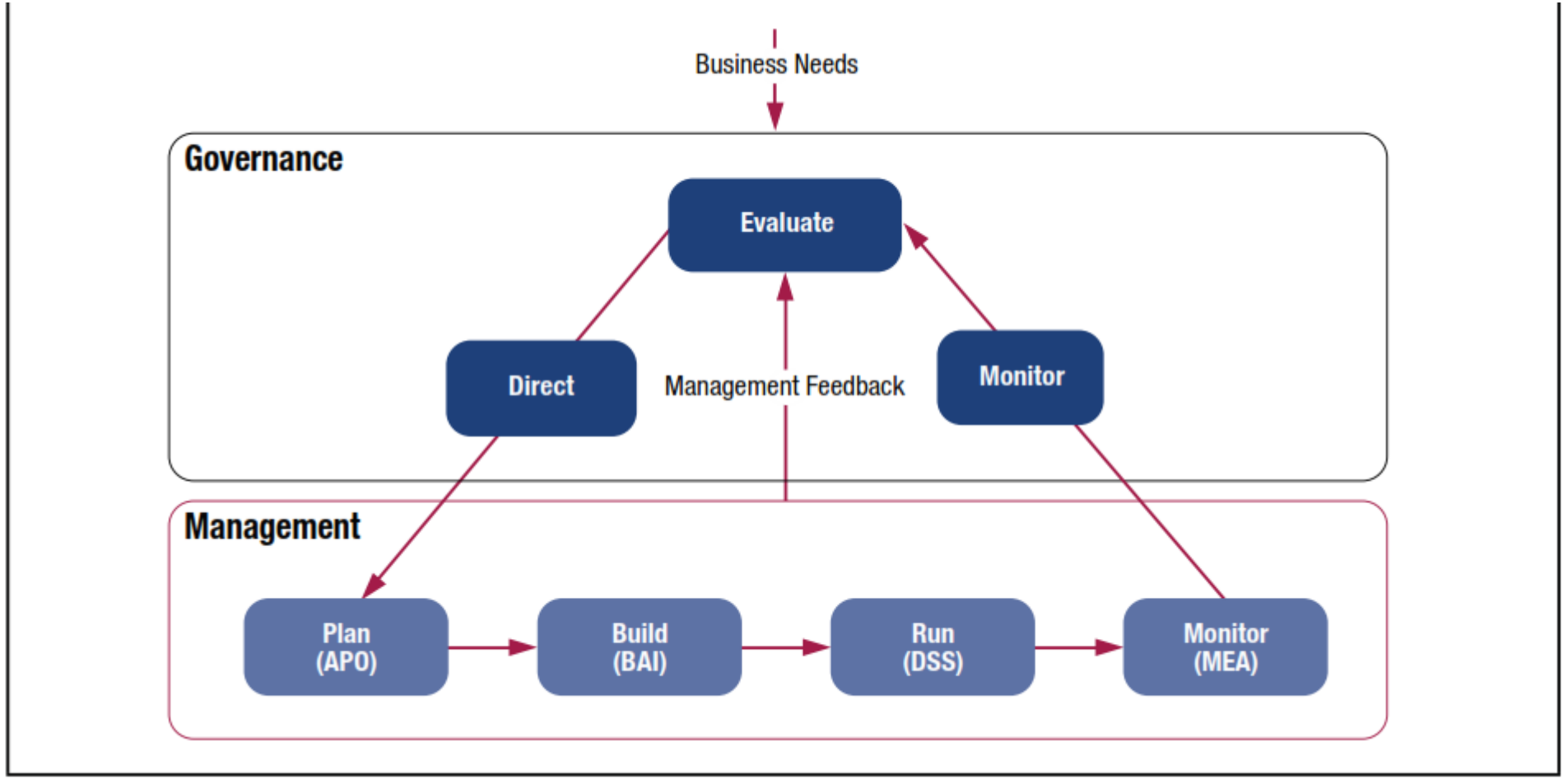
Governance Objective



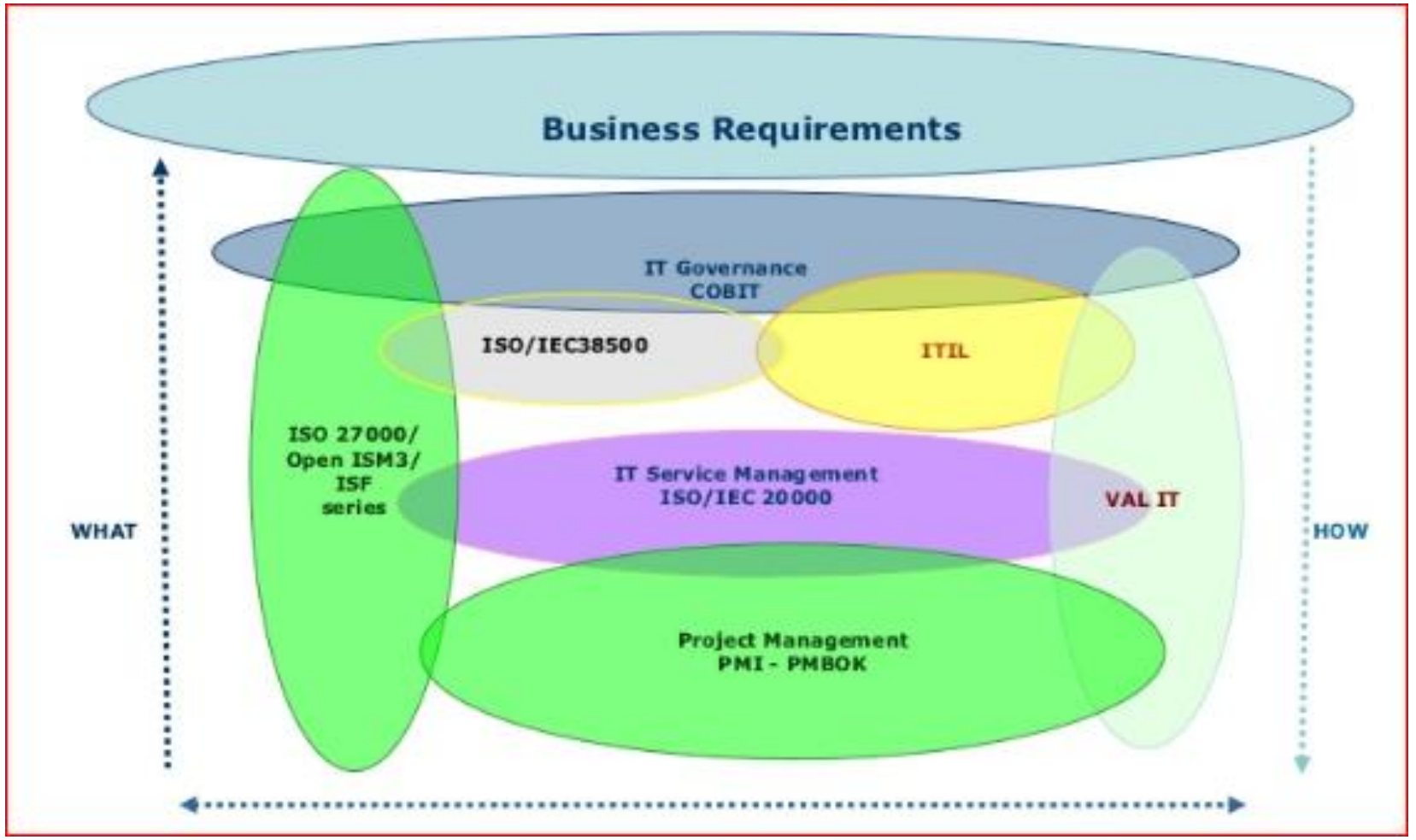
COBIT Goals Cascade



COBIT Governance & Management Key Areas



IT Governance Framework



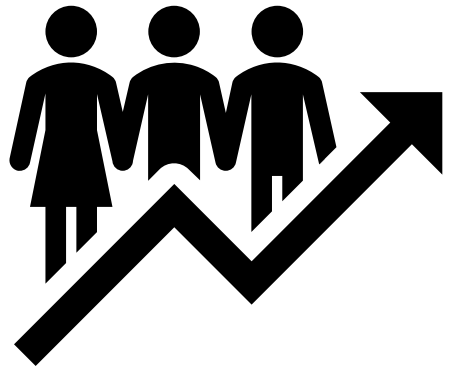
Sumber: ISACA

PerPres 95 Tahun 2018 Tentang SPBE

Kebijakan Teknis TIK di organisasi

IT Governance Audit?

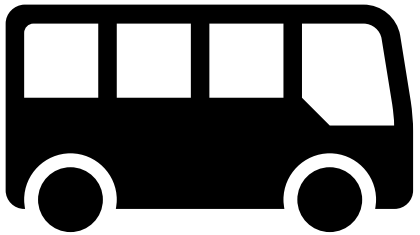
Imagine the city’s transportation inspectors



Checking Whether the City Has a Good Transportation Plan (Strategic Alignment)

Inspectors ask:

- Does the city have a clear plan for routes, roads, train lines, and bus schedules?
- Are the routes serving the people's needs?
- Are new development projects aligned with the city's long-term vision?



IT governance audit version:

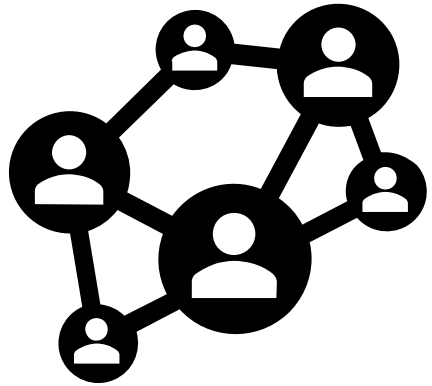
- Do IT projects support organizational strategy?
- Is IT aligned with business goals?
- Is there an IT roadmap or digital transformation plan?

Auditors check whether the direction is right, not just the technology.

Checking Whether Resources Are Used Efficiently (Resource Optimization)

Inspectors look for:

- Too many buses on one route, too few on others.
- Broken vehicles that are not maintained.
- Money wasted on redundant infrastructure.



IT governance audit version:

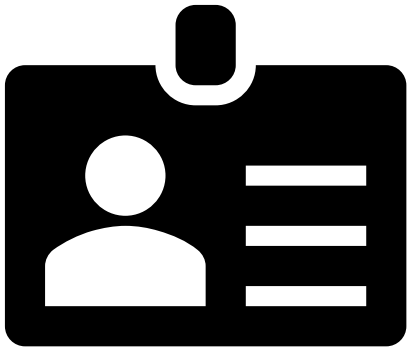
- Are IT budgets used wisely?
- Are there duplicate or unnecessary systems?
- Are IT staff assigned effectively?

Auditors prevent waste and ensure efficient use of IT resources.

Checking Whether Accidents Are Prevented (Risk Optimization)

Inspectors review:

- Safety checks for buses and trains.
- Driver training programs.
- Plans for emergencies or breakdowns.
- Traffic control systems.



IT governance audit version:

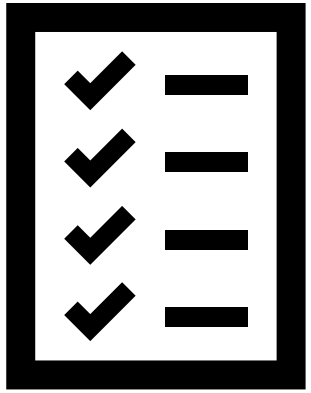
- Are IT risks identified and managed?
- Are cybersecurity measures in place?
- Are there strategies for system failures or data breaches?

Auditors ensure the organization is not exposed to avoidable IT risks.

Checking Whether Performance Is Measured (Performance Monitoring)

Inspectors assess:

- Whether buses/trains run on time.
- Passenger satisfaction.
- Traffic flow efficiency.
- Reports and dashboards used by city leaders.



IT governance audit version:

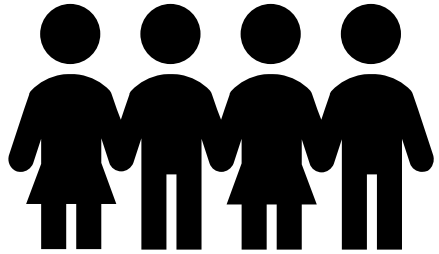
- Does IT measure its performance with KPIs?
- Are project results tracked?
- Are benefits realized and reported?

Auditors verify that IT performance is monitored and actually delivers value.

Checking Roles and Accountability (Decision-Making Structure)

Inspectors confirm:

- Who approves new routes?
- Who handles maintenance?
- Who monitors safety?
- Is there clear leadership?



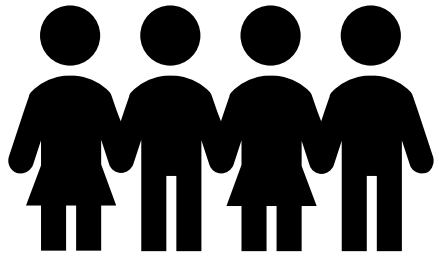
IT governance audit version:

- Is there an IT steering committee?
- Are roles clearly defined?
- Is accountability assigned?
- Are decisions made transparently?

Auditors make sure IT decisions are made responsibly and consistently.

To summarize

IT governance audit is like sending independent inspectors to check whether a city is governing its transportation system properly: ensuring direction, safety, efficiency, accountability, and performance.



IT Governance Audit Types

General	Specific	
IT governance maturity/capability audit*	*Benefit realization audit*	*IT service audit*
	IT Project audit	*Security management audit*
	Information systems development audit	*IT Continuity audit*
	Data governance audit	

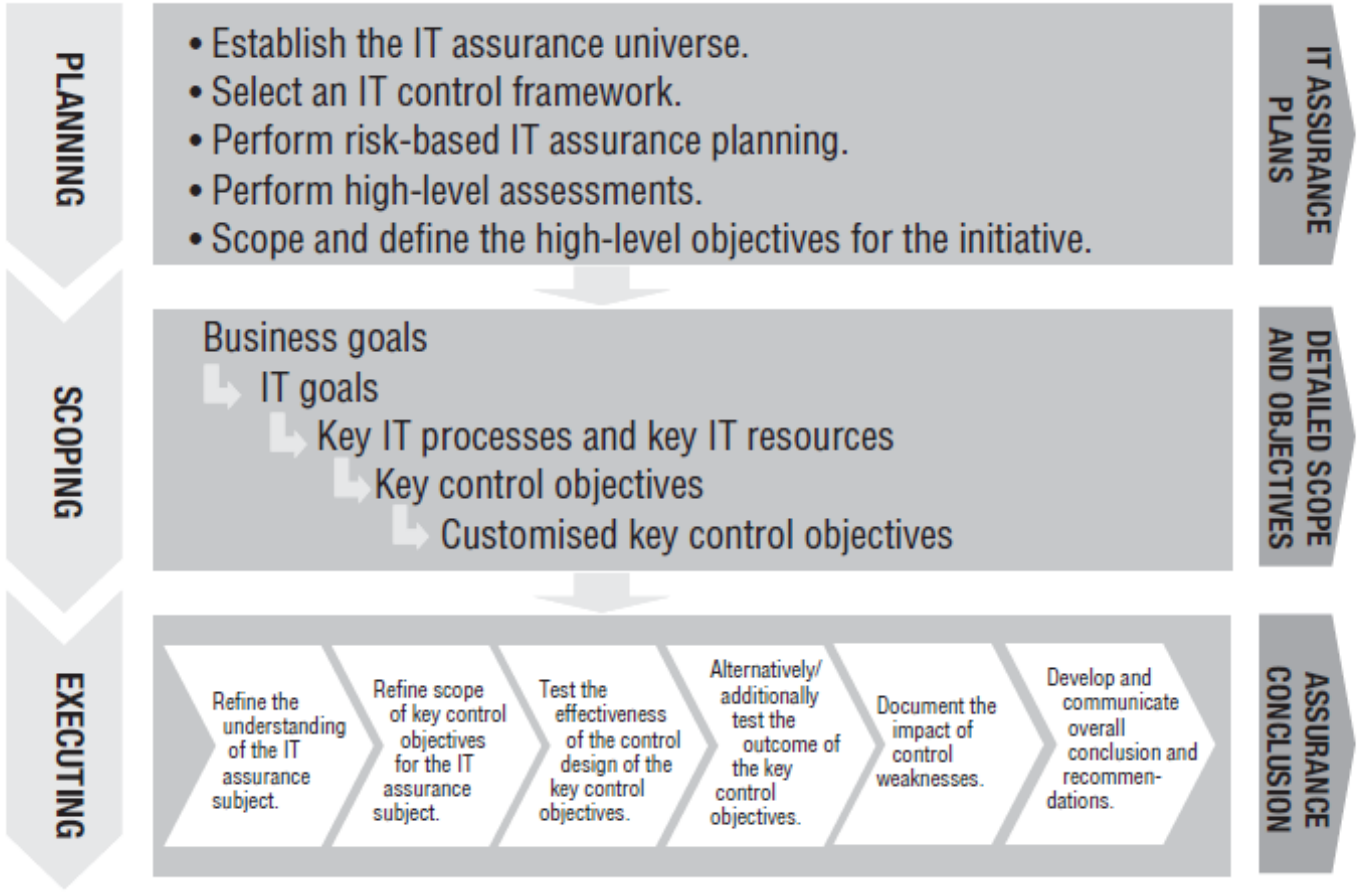
*Capability for process, maturity for all enablers collectively

Purpose of IT Governance Audit

1. **Assess the maturity of the organization’s IT governance**
2. **Identify the areas for improvement**
3. **Propose recommendation to improve the process**

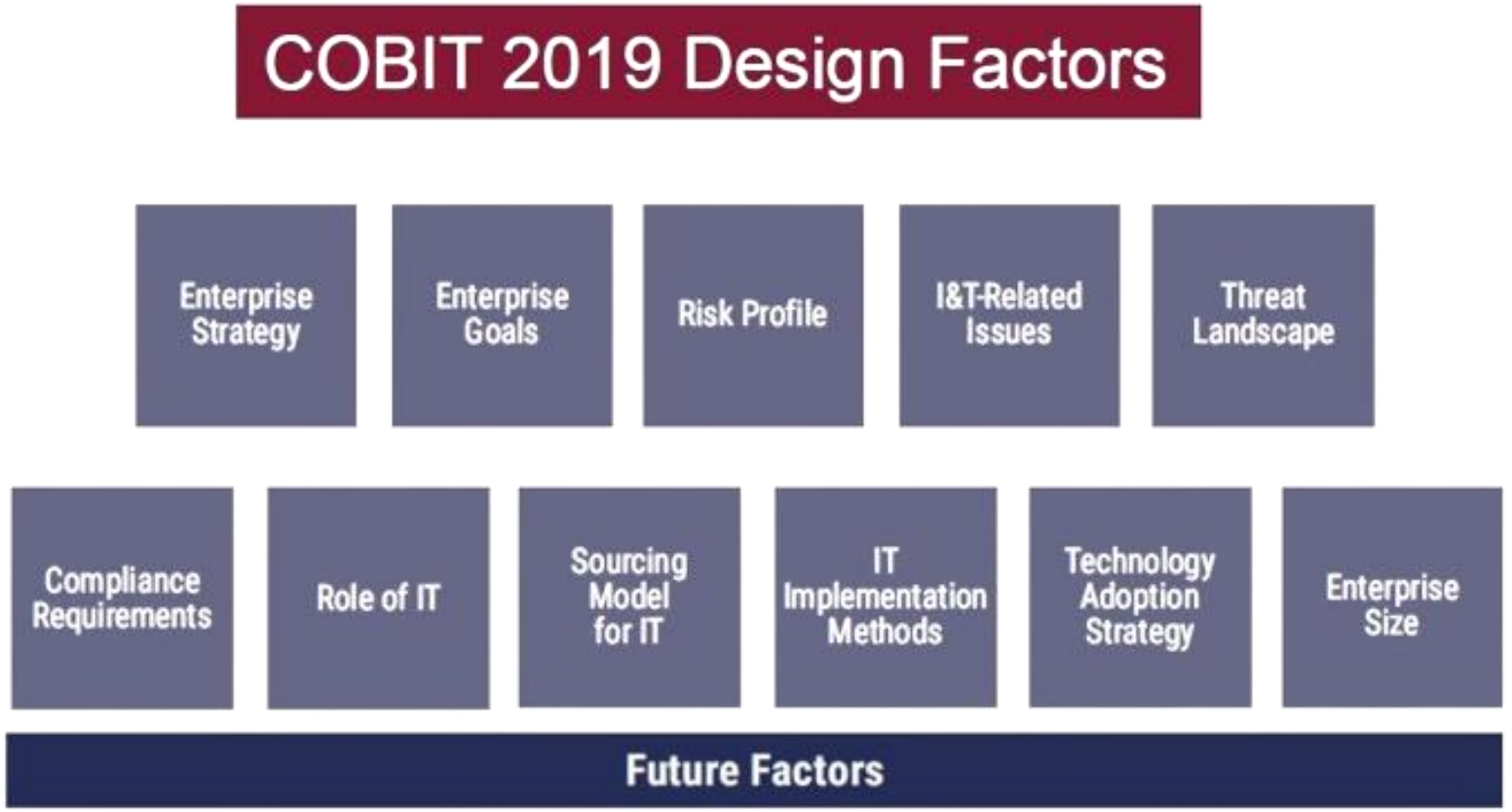
Performing

The steps



Source: isaca, 2014

What To Prioritize



Source: isaca, 2019

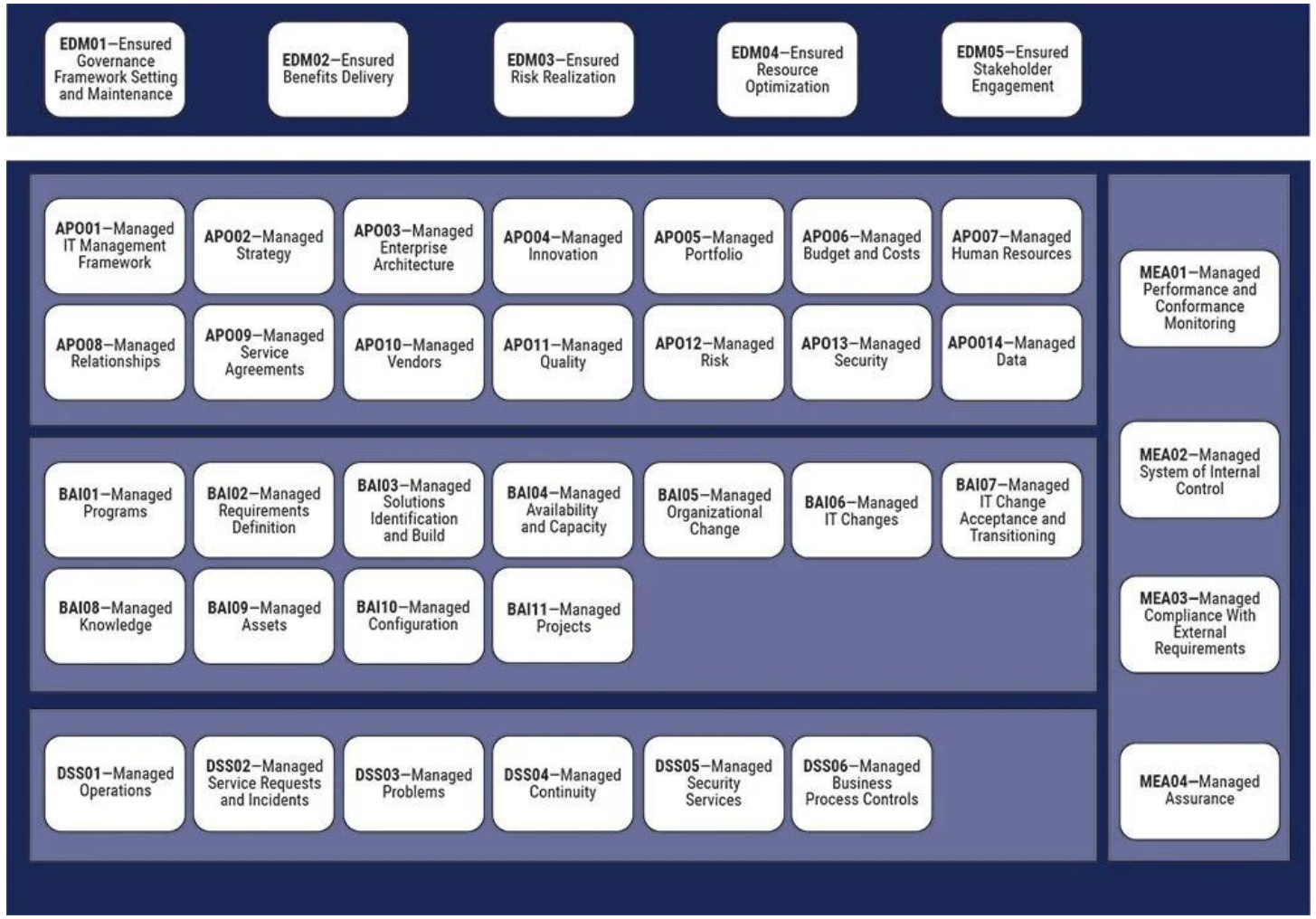
What We Assess



Governance systems

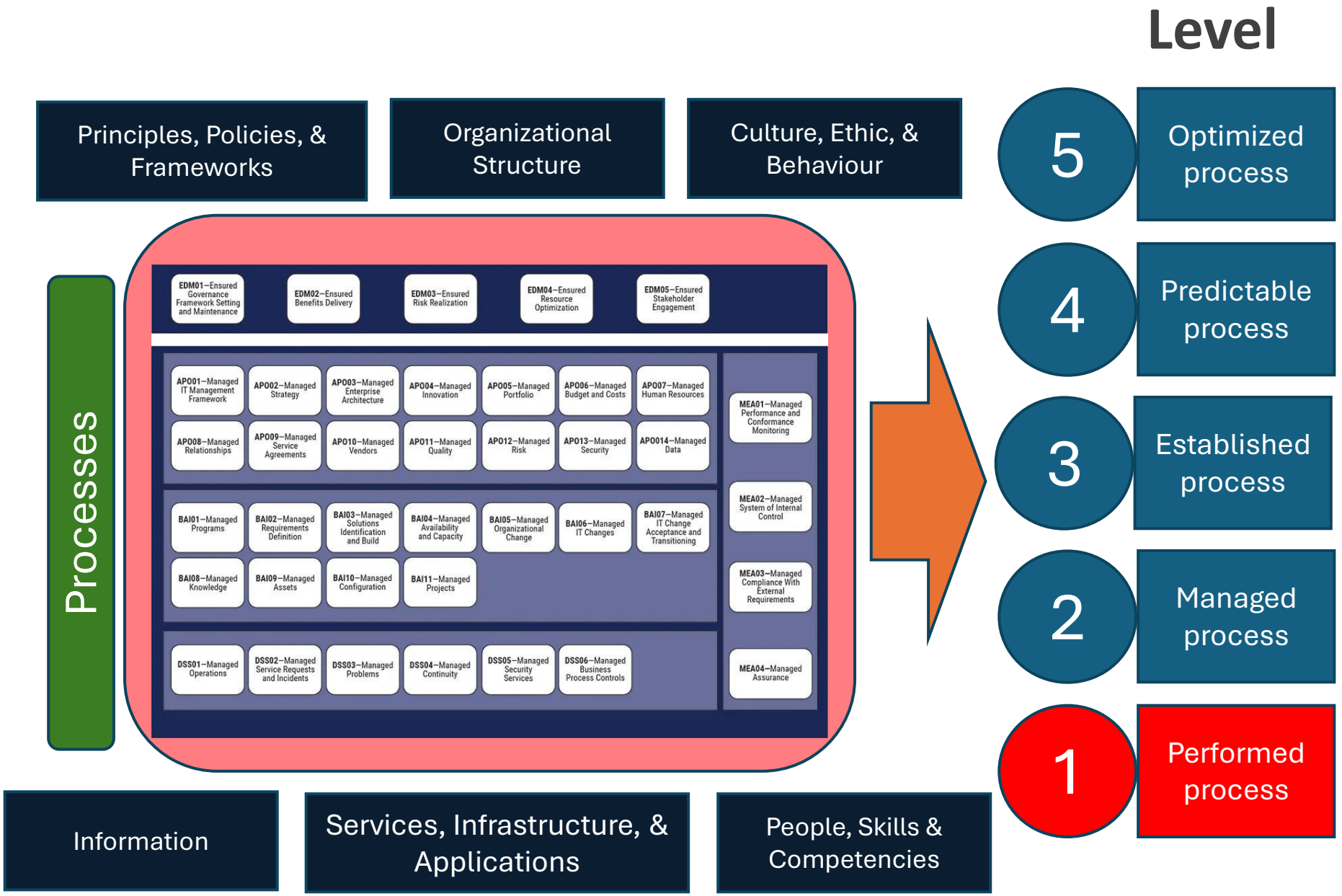
Source: isaca, 2019

The Processes



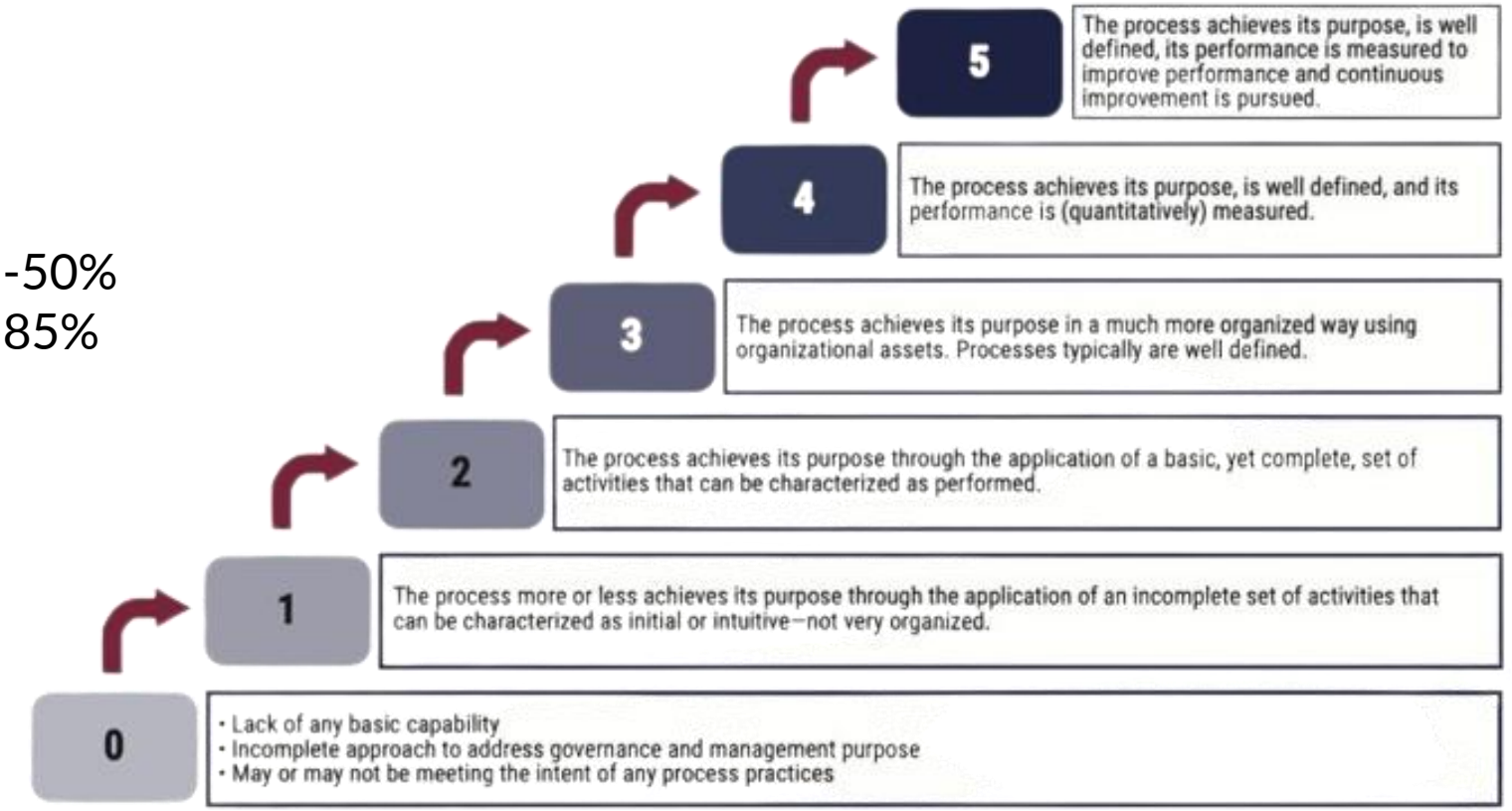
Source: isaca, 2019

The IT Governance Universe



The Maturity Levelling

- Not achieved: 0-15%
- Partially achieved: >15-50%
- Largely achieved: >50-85%
- Fully achieved: >85%



Source: isaca, 2019

Audit Tools (Document Assessment)

The identity of the assessed process

The explanation

Data Collection	PA1.1 - Process Performance					
Oganization Name						
Process Number	BAI04					
Name	Manage Availability and Capacity					
Description	Balance current and future needs for availability, performance and capacity with cost-effective service provision. Include assessment of current capabilities, forecasting of future needs based on business requirements, analysis of business impacts, and assessment of risk to plan and implement actions to meet the identified requirements.					
Purpose	Maintain service availability, efficient management of resources, and optimisation of system performance through prediction of future performance and capacity requirements.					
			Weight	(Y/N)	Nilai	Note
Work Product	BAI04-WP1	Performance and capacity plans	1		0	
	BAI04-WP2	Evaluations against SLAs	1		0	
	BAI04-WP3	Prioritised improvements	1		0	
	BAI04-WP4	Performance and capacity plans	1		0	
	BAI04-WP5	Availability, performance and capacity monitoring review reports	2		0	
	BAI04-WP6	Performance and capacity gaps	2		0	
	BAI04-WP7	Corrective actions	2		0	
	BAI04-WP8	Emergency escalation procedure	2		0	
	BAI04-WP9	Availability, performance and capacity scenarios	1		0	
	BAI04-WP10	Availability, performance and capacity business impact assessments	1		0	

CONTOH

Weight of each item

The existence of evidence

Score for each item (binary)

Audit Tools (Activity Assessment)

The identity of the assessed process

The explanation

Data Collection	PA1.1 - Process Performance
Organization Name	
Process Number	BAI04
Name	Manage Availability and Capacity
Description	Balance current and future needs for availability, performance and capacity with cost-effective service provision. Include assessment of current capabilities, forecasting of future needs based on business requirements, analysis of business impacts, and assessment of risk to plan and implement actions to meet the identified requirements.
Purpose	Maintain service availability, efficient management of resources, and optimisation of system performance through prediction of future performance and capacity requirements.

Management Practices		Activity	Weight	(Y/N)	Nilai	Note
BAI04-BP5	**Investigate and address availability, performance, and capacity issues.** Address deviations by investigating and resolving identified availability, performance, and capacity issues.	1.Obtain guidance from vendor product manuals to ensure an appropriate level of performance availability for peak processing and workloads.	2		0	
		2.Identify performance and capacity gaps based on monitoring current and forecasted performance. Use the known availability, continuity and recovery specifications to classify resources and allow prioritisation	2		0	
		3.Define corrective actions (e.g., shifting workload, prioritising tasks or adding resources, when performance and capacity issues are identified	2		0	
		4.Integrate required corrective actions into the appropriate planning and change management processes	2		0	
		5.Define an escalation procedure for swift resolution in case of emergency capacity and performance problems.	2		0	
				Nilai 1.1	PA 0.00%	

- Not achieved: 0-15%
- Partially achieved: >15-50%
- Largely achieved: >50-85%
- Fully achieved: >85%

Overall score for the process

Back to the case

A government agency create several systems to ensure that financial data across Indonesia, from regional offices to headquarters, is accurate, integrated, and timely.

Over the past few years, the agency launched several digital transformation projects:

1. A new financial reporting system.
2. A data warehouse for analytics.
3. An employee self-service portal.

However, after three years, none of the projects are fully operational.

Study Case

An internal review found:

1. No clear ownership: each project runs separately with no central coordination.
2. Frequent scope changes: systems are redesigned mid-project due to unclear requirements.
3. Overlapping systems: different units build similar applications for the same function.
4. Lack of performance monitoring: no KPIs to measure project success.
5. No structured IT governance framework: IT decisions are made ad hoc.

Meanwhile, the agency keeps investing heavily in IT infrastructure, but the benefits are not visible.

How would you audit this?

Study Case

You are part of the IT governance audit team.

Your objectives:

1.Evaluate whether IT governance structures and processes exist and are effective.

2.Assess alignment between IT initiatives and the organization’s strategic objectives.

3.Identify gaps in accountability, risk management, and performance monitoring.

How will you perform your IT governance audit?

Study Case

Map the process to COBIT processes

COBIT Governance Objective	Audit Questions
EDM01 – Ensure Governance Framework Setting and Maintenance	Does the agency have a documented IT governance structure, roles, and responsibilities?
EDM02 – Ensure Benefits Delivery	Are IT projects aligned with strategic goals and delivering expected value?
EDM03 – Ensure Risk Optimization	Are IT-related risks identified, managed, and reported to management?
EDM04 – Ensure Resource Optimization	Are IT resources (budget, people, infrastructure) used efficiently?
EDM05 – Ensure Stakeholder Transparency	Are IT decisions and performance communicated clearly to stakeholders?

Audit Findings (Examples)

After interviews, document reviews, and analysis, the team identifies:

1.Governance structure weakness

- There’s an IT Steering Committee, but it rarely meets and has no clear mandate.
- IT responsibilities are not well-defined, some business units make their own IT purchases.

2.Strategic alignment issue

- IT projects are not linked to organizational KPIs or strategic plan outcomes.
- Each unit defines its own “priority projects” without enterprise-wide coordination.

3.Benefit and performance monitoring weakness

- No formal post-implementation review of IT projects.
- Project success measured only by “system go-live,” not by value delivered.

4.Resource and risk management issues

- Redundant systems waste budget and staff time.
- IT risks (e.g., data integration failure) not included in enterprise risk registers.

Discussion Questions

1. What are the main IT governance weaknesses you can identify in this case?
2. How could you verify whether IT projects are aligned with strategic objectives?
3. What recommendations would you make to improve IT governance in APFI?
4. How can an IT governance audit help prevent waste and improve performance?

Key Learning Points

1.IT Governance ≠ IT Management.

Governance is about direction and oversight, not daily operations.

2.IT must align with organizational goals.

IT projects that are not tied to business strategy will waste resources.

3.Auditors evaluate processes, not just systems.

You audit how IT decisions are made, who is accountable, and how performance is measured.

4.Good governance enables transparency, accountability, and value delivery.

Pair Discussion

Study Case

Garuda United FC is a professional football club competing in the national league. Mid-season, the club's board is concerned because:

- The team lost 6 of the last 10 matches.
- Several key players are injured.
- Training sessions are often rescheduled last-minute.
- Fans complain about poor communication from the club.
- The coach and team manager blame each other for poor planning.

To improve performance and prepare for the second half of the season, the Club Board requests a performance governance review, similar to an IT governance audit in the corporate world.

The purpose: to evaluate whether the club's strategy, processes, resources, and leadership are aligned to deliver expected results.

Study Case

Football Team Component	Analogy in IT Governance
Club Strategy & Game Vision	IT Strategy Alignment
Coach’s Tactical Plan	IT Policies & Standards
Training Processes	IT Processes
Team Manager & Medical Team	IT Resource Management
Player Recruitment & Development	IT Human Capital & Skills
Match Analytics	Performance Monitoring & KPIs
Club Board Oversight	IT Governance Oversight (e.g., Steering Committee)

Study Case

During the review, the auditor found these issues:

1.No clear game strategy for the next matches. The coach uses different tactics each week.

2.Training schedule frequently changes, causing players confusion and fatigue.

3.Injured players take longer to recover because there is no structured rehabilitation program.

4.Recruitment decisions are made informally, often based on personal preferences.

5.Match performance analytics is rarely used to decide game plans.

6.Board meetings often skip discussions on player development and long-term plans.

7.Communication with fans (stakeholders) is inconsistent, causing dissatisfaction.

Study Case

1. Which findings relate to “Strategic Alignment” in IT Governance? Why?
2. Identify issues related to “IT Resource Management” using the football analogy.
3. Which findings show weak “Performance Measurement” and why is it important?
4. If you were the auditor, what governance recommendations would you suggest to the club board?

Homework



Homework

You are the IT Governance Auditor for a small digital kingdom called Techland. Techland is experiencing problems:

- Systems keep breaking.
- Teams argue about priorities.
- New tools are bought but never used.
- Important reports are not updated.

Here are the problems:

- The King wants new technology, but the IT team doesn't know the kingdom's long-term goals.
- Important security checks are skipped because "there is not enough time."
- The magic developers (IT staff) quit because they are overworked.
- No one tracks whether IT services meet the expected performance.
- The treasury bought a new system, but users don't understand how to use it.

Your mission: identify what went wrong and suggest how to fix it.

Recommend **three** easy-to-understand improvements the kingdom can apply.

•What should Techland do?
•Why you choose to put them as priority?
•What benefit will they bring?

Homework

Send via Google Form, due a week after our current lecture, before the next class begin.

The submission link:
https://forms.gle/4TFqXoHLvSnwPavf8

P.S Please communicate with me if you are facing special condition (fall sick, facing misfortune, etc) to extend the due date.