

GOVERNANCE OF INFORMATION TECHNOLOGY (IT)

Preface

"Доверяй, но проверяй".



Доверяй, но проверяй



Trust, but verify

GOVERNANCE OF INFORMATION TECHNOLOGY (IT)

Chapter 1

"For there are very few so foolish that had not rather govern themselves than be governed by others." Thomas Hobbes (1588-1679)

Summary

1. Introduction. Governing IT.
2. Management vs. Governance.
3. Decision-making and ...
4. ... structures of governance of IT.
5. Starting a framework for IT governance in their company without standards.
6. Business strategy, performance and governance of IT.
7. Align IT: indicators of progress.
8. The role of the CIO: IT leadership.
9. The value of IT.
10. ISO 38500, a conceptual model: the six principles of the standard.
11. Adapting the conceptual model of governance to the reality of the company.
12. Example Apps to aid decision-making for CIOs
13. Example Application Portfolio Management
14. To govern public enterprises, The 4 "E's"



1. Introduction

- The senior management (and the board) of companies and organizations have realized the significant impact that ICT has on success / failure of their activities.
- Senior management (and board members) needs to know if the management of their information systems:
 - It serves to achieve their goals
 - It is flexible to learn and to adapt
 - It faces potential risks judiciously
 - It recognizes opportunities and acts accordingly



1. Introduction

- Top management of the company expects from IT:
 - Develop business value, that is, provide solutions and fast, safe and high quality services.
 - Generate a ROI (Return Of Investment) reasonable
 - Move from gains from efficiency and productivity towards value creation and business effectiveness



1. Introduction

- In many companies, the IT expectations and reality do not match and senior management (or board) faces:
 - Loss of business, damage to reputation and competitive position weakened.
 - Inability to obtain or measure the ROI of IT
 - Failure of IT initiatives to achieve innovation and expected benefits
 - Inadequate technology and even obsolete
 - Inability to take advantage of new technologies available
 - The time schedule (deadlines) are not met and budgets are exceeded

1. Introduction



- Companies and successful organizations understand the risks and exploit the benefits of IT, finding ways to:
 - IT strategy is aligned with business strategy (integration)
 - Deployment of the IT strategy and objectives cascade throughout the organization
 - Providing organizational structures that facilitate the implementation of that strategy and those goals
 - Creating constructive relationships and effective communication
 - Insisting on the adoption and implementation of a framework for control of IT
 - Measuring the performance of IT in terms of business
- "IT supports and extends business strategies and objectives"

Do you still think that you do not need to know anything about IT governance?



The bodies of IT projects buried under a lot of \$\$\$

- <http://spectrum.ieee.org/static/monuments-to-failure>

GOVERNANCE OF INFORMATION TECHNOLOGY (IT)

Chapter 2

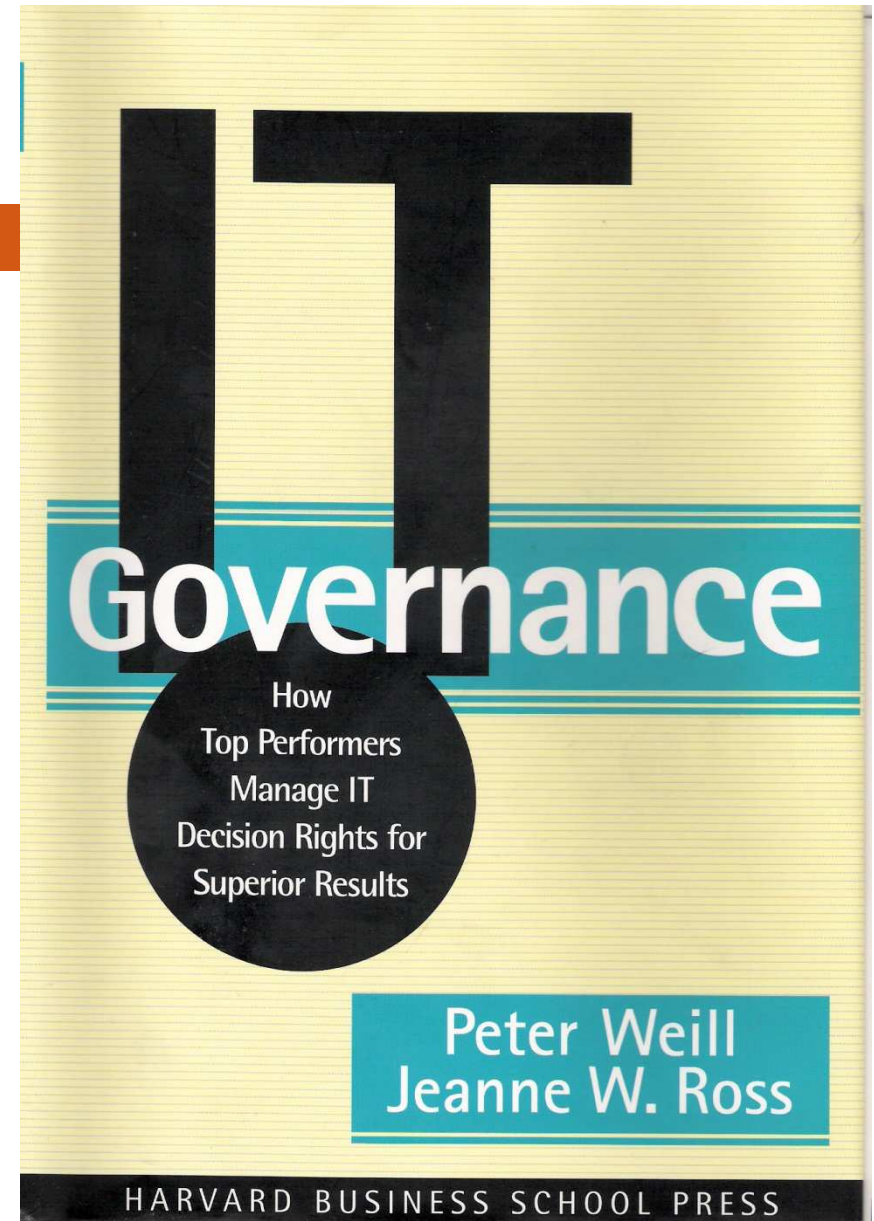
"The governance should be structured to mankind as it is, and not as it should be, if it were free from vices." James Kent (1763 - 1847)

Summary

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Basic Reference

- **IT Governance: How Top Performers Manage IT Decision Rights for Superior Results** by Peter Weill, Jeanne Ross (2004)



2. Governance of IT: Direct, Evaluate and Monitor

- Many companies manage assets - people, money, factories and customer relationships - but the information technology that collects, stores and disseminates their data about these assets left perplexed to them.
- For many years, some organizations have been successful despite management practices for IT were weak ... but that is no longer possible



Comparison	Traditional IT	Modern IT
Approach to work	Reactive	Proactive
Attitude	Each project is different	Many similarities, cumulative improvement
Solutions	Systems	Procedures, policies, apps,...
Scope	Restricted to systems	Includes processes as well as systems
Scope of IT projects	Systems	Process change
Process improvement	Not included most of the time	Included
Change management	Not included	Included
Resources	Dedicated to specific work	Greater flexibility and management control
Outsourcing	By area or individual basis	Strategic
Alignment with business	No formal approach	Formal approach through processes
Role of IT	Technical, support	Coordinating as well as supporting
Measurement of IT	Not applicable	IT coordinates measurements



2. Governance of IT: Direct, Evaluate and Monitor

- "Companies that have a governance of IT practice above average, pursuing a specific strategy, have 20% more profit than those with a poor governance pursuing the same strategy"
- What is the governance of IT? Before, we may review what corporate governance is.

2. Governance of IT: Direct, Evaluate and Monitor



- In most countries corporate governance becomes a supervisory board which is responsible for protecting the interests of shareholders and other stakeholders such as employees, customers, creditors, ...
- The board works with a team of managers to implement the principles of governance to ensure the effectiveness of organizational processes.
- "There is no single model of corporate governance"

2. Governance of IT: Direct, Evaluate and Monitor

- To govern IS:
 - The practice of controlling behavior, activities, processes by:
 - Create a control mechanism defining roles, responsibilities, decision rights and obligations
 - Set rules (policy)
 - Define limits to restrict behavior
 - React to changes and adjust the new limits features:
 - Direct (delegating) Evaluate and Monitor



2. Governance of IT: Direct, Evaluate and Monitor

- Because it is so simple governing, the governance "leaders" are not paid for their work because is complex and difficult, they are paid for the risk of liability for non-conformity.
- So that, Governing is primarily a state of mind after an activity, and then it comes the tools to enable or to assist this activity.



2. Governance of IT: Direct, Evaluate and Monitor

- The governance of IT is not substantially different corporate governance or financial governance:
 - CFO does not sign each check or authorize each payment. Instead of this operations CFO develops financial governance activities, specifying who can make decisions and how about financing. Therefore, CFO oversees the investment portfolio, manages the capital flow and risk exposure. The CFO oversees a number of financial metrics to manage the financial assets of the company, intervening only if there are unforeseen problems or missing opportunities
- We apply the same approach to governance of IT.





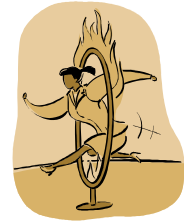
2. Governance of IT: Direct, Evaluate and Monitor

- IT governance is the responsibility of executives and senior management and consists of the leadership, organizational structures and processes that ensure that IT at company maintains and extends the objectives and strategies of the organization. (Governance Institute COBIT, process-oriented definition)
- IT governance is about specifying the decision rights and accountability framework to produce the desirable behavior in the use of IT. (Weill & Ross. IT-Governance. Behavior-oriented definition)



2. Governance of IT: Direct, Evaluate and Monitor

- IT Governance is the allocation of responsibility and the design of the IT organization, aimed at efficient and effective use of IT in business processes and complying with internal and external rules.
 - Responsibility: individual, organization and community are responsible for their actions and may be required to explain them to others. They are assigned a trust or duty depending on their position.
 - Rules: policies and principles guiding the action



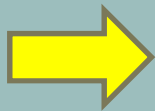
2. Governance of IT: Direct, Evaluate and Monitor

- IT Management is about to make decisions within a framework of responsibilities for a clearly defined area of the organization, in this case IT.
- Therefore, to distribute responsibilities and rights to the management system is the kind of issue that the governance of IT has to do. Other tasks might include:
 - To Ensure the authority and responsibility
 - To Ensure that IT meets with regulatory authorities
 - To Ensure that IT is organized and are ready for change
 - To Ensure that IT is aligned with the business and its processes
 - To Ensure that IT delivers value for money

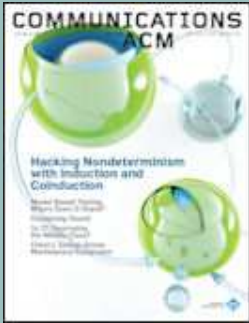
2. Governance of IT: Direct, Evaluate and Monitor



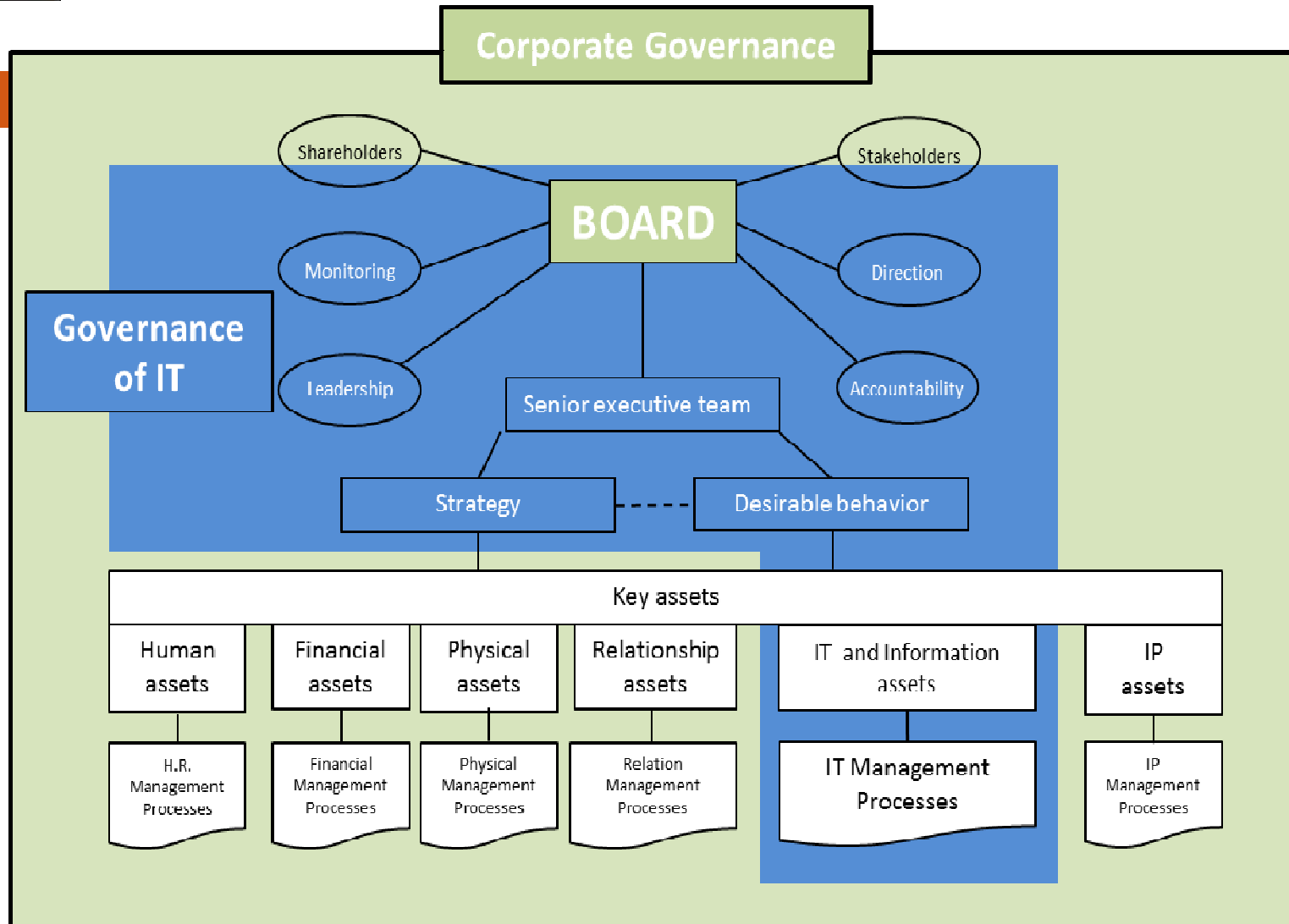
- 4 COBIT and ITIL are currently considered management frameworks, NOT governance frameworks.
- The same applies to the ISO / IEC 20000 standard that is also management standardization of services.
- There is only one standard for IT governance: the ISO / IEC 38500, that COBIT 5 has recently adopted.



Carlos Juiz and Mark Toomey. **To govern IT, or not to govern IT?.** *Communications of ACM* 58, 2 (February 2015), pp. 58-64, 2015.

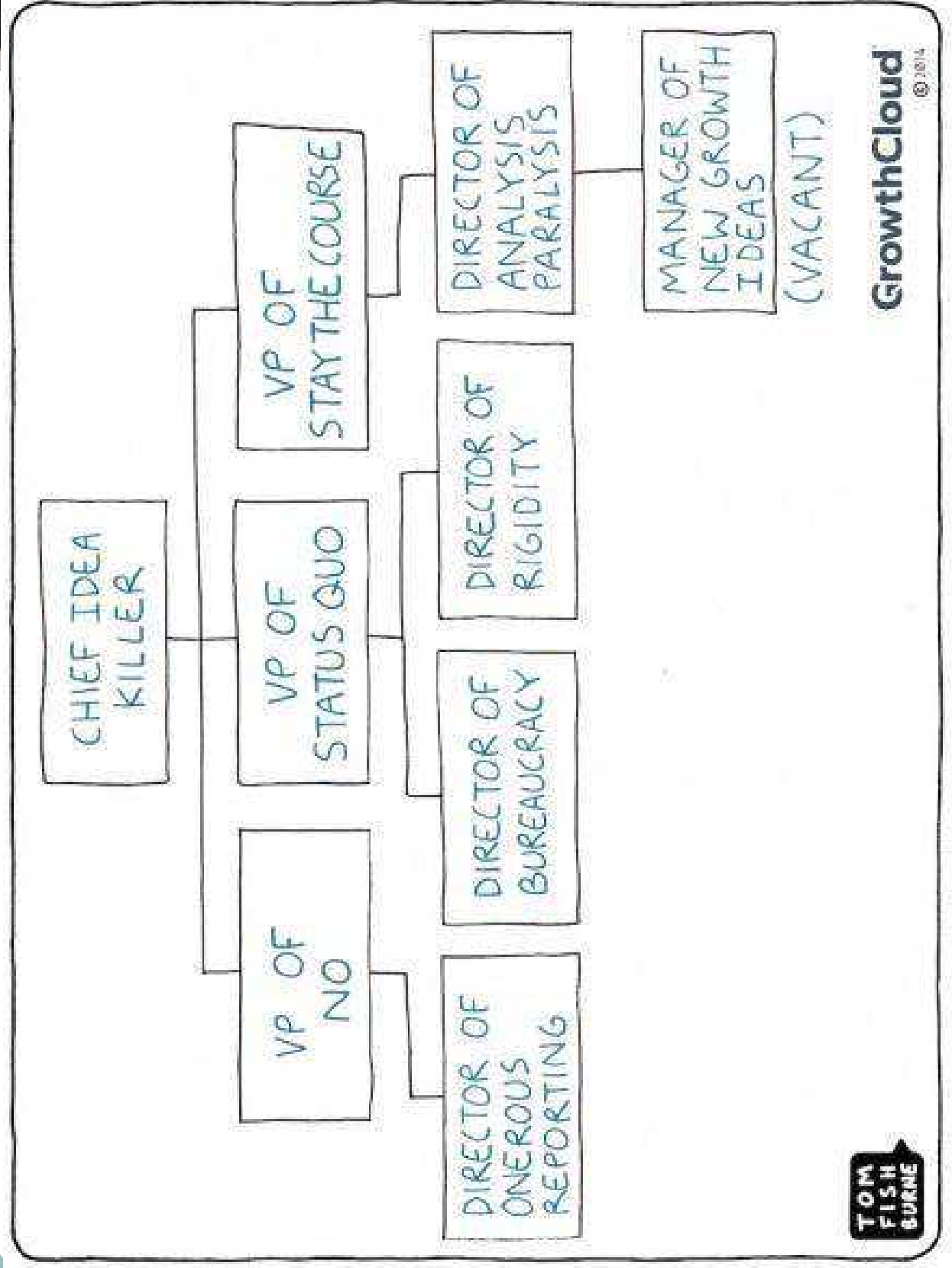


Peter Weill / Jeanne Ross (2004)



Comparative Factors of IT Governance

Factor	Traditional IT	Modern IT
Systems	Separate, single IT department focused	Integrated, multi-department systems
IT goal	Efficiency and cost control	Effectiveness
Responsability	Complete IT work on time and within the budget	Achieve business benefits and do the work within schedule and budget
IT oversight	Single manager who is responsible of IT	Upper management, governance
Ideas for new IT work	Reactive	Proactive





2. Governance of IT: Direct, Evaluate and Monitor

- The governance of IT is summarized in effectively answer these three questions:
 - What decisions must be made to ensure effective management and use of ICT?
 - Who should make these decisions?
 - How are these decisions be made and how they monitored?
- The aim of this course is to provide a framework of governance (framework) and to understand how to help address these issues



FIGURE 1-2

Governance Arrangements Matrix—Which Governance Archetypes Are Used for Different Types of Decisions?

DECISION ARCHETYPE	IT Principles	IT Architecture	IT Infrastructure Strategies	Business Application Needs	IT Investment
Business Monarchy					
IT Monarchy					
Feudal					
Federal					
Duopoly					
Anarchy					
Don't Know					

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2. Governance of IT: Direct, Evaluate and Monitor

- Headers of table are the governance of IT criteria that list 5 interrelated decisions:
 - IT principles: Clarify the role of ICT business
 - IT Architecture: Defining the requirements of integration and standardization
 - IT Infrastructure: Determine shared services and utilities
 - Business application needs: Specify the business needs to acquire or develop them internally
 - Investment and prioritization of IT: Choosing which initiatives are financed and how much is spent on them.

FIGURE 1.2
Governance Arrangements Matrix—Which Governance Archetypes
Are Used for Different Types of Decisions?

Decision	IT Principles	IT Architecture	IT Infrastructure	Business Application Needs	Investment and Prioritization
IT Principles					
IT Architecture					
IT Infrastructure					
Business Application Needs					
Investment and Prioritization					

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2. Governance of IT: Direct, Evaluate and Monitor

- The 5 key decisions are related in their flow from left to right: IT architecture principles lead directing infrastructure. The ability to build the infrastructure allows applications based on business needs. Finally, investments should be driven by the principles, architecture, infrastructure and application needs.
- The rows of the list are archetypes (political) for specifying decision rights (exacerbated). Each archetype identifies the type of people involved in IT decision.

FIGURE 1-2
Governance Arrangements Matrix—Which Governance Archetypes Are Used for Different Types of Decisions?

Decision Area	IT Principles	IT Architecture	IT Infrastructure Strategies	Business Application Needs	IT Investment
University					
Health					
Federal					
Security					
Industry					
Don't Know					

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2. Governance of IT: Direct, Evaluate and Monitor

- Why is important the governance of IT?
 - Dependence on IT for companies obliges to govern IT, since harmonizes the decisions on the management and use of IT, the behavior and desired business objectives through IT
 - 8 reasons to govern IT:



2. Governance of IT: Direct, Evaluate and Monitor

1. Good governance of IT worth
 - Firms that apply to government IT has a ROA (Return On Assets) 20% higher.
2. IT is expensive
 - The average investment in IT for a large firm is > 4.25% of annual profit. This investment exceeds 50% of capital investment in many companies.
 - IT helps to refine governance structures to better focus on IT investment priorities.



2. Governance of IT: Direct, Evaluate and Monitor

3. IT is omnipresent

- Some estimates suggest that only 20% of budget expenditure on IT is visible in the IT budget. The rest of the expenditure incurred on business processes, product development, etc.
- If properly designed, the provisions of IT governance, decision-making is divided into those who are responsible for the results.
- Everyone must understand the technology platform and not just those responsible for IT and less leave IT management to decide everything.



2. Governance of IT: Direct, Evaluate and Monitor

4. New IT companies are creating new business opportunities
 - Social networks, mobile technologies, cloud computing, big data ... New services create new strategic challenges.
 - Predicting the right infrastructure at the right time enables rapid deployment of new IT-based business and the consolidation of reduced current business processes costs.



2. Governance of IT: Direct, Evaluate and Monitor

5. The IT governance is critical for organizational learning about the value of IT
 - Avoid: *"IT investments are as advertising, I only know half of what is spent and do not know which half."*
 - It can be difficult to determine in advance how much new capacity will give us a new development. The governance creates effective mechanisms through which companies can discuss the potential value and formalize learning.
 - Companies usually learn through exceptions, those exceptions formalize and update processes enable learning about the business.



2. Governance of IT: Direct, Evaluate and Monitor

6. The value of IT depends on more than just good technology

- Some estimates value that 70% of all IT projects fail because organizations do not adopt new processes that apply these new ICTs.
- When top management completely delegates responsibility to IT managers, disaster is assured.
- Companies that have successfully involve the right people in the decision-making process produced better implementations.



2. Governance of IT: Direct, Evaluate and Monitor

7. Top management can not decide everything
 - Even if it could, they were a bottleneck.
 - But the company decisions must be consistent with top management.
 - Adequate IT governance provides a process of making clear, transparent decisions, which leads the behavior connected with the vision of the board, but delegating at a time in everyone's creativity.



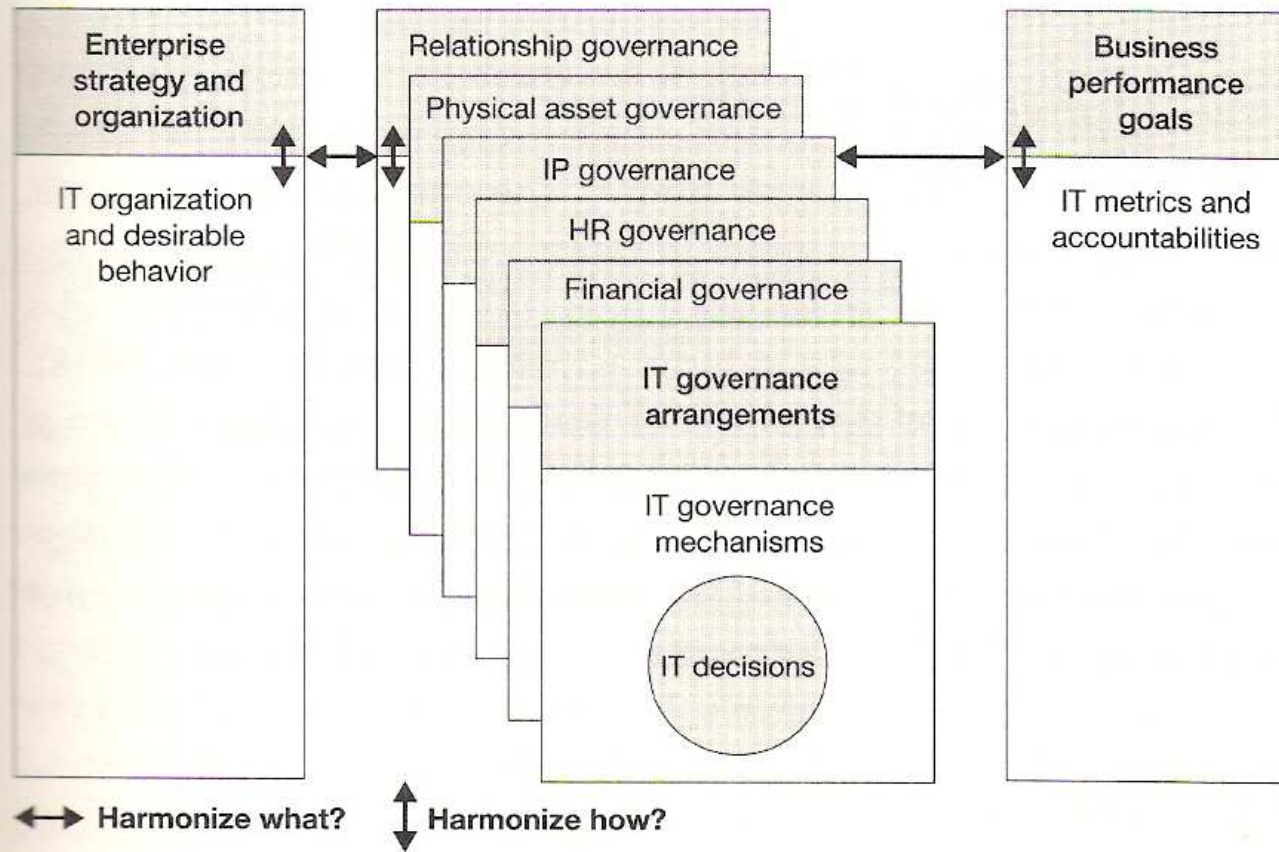
2. Governance of IT: Direct, Evaluate and Monitor

8. IT governance is not always the same, it is adaptable to each organization
 - The patterns of successful companies are not all equal, some emphasize profit growth and other incomes. Even non-profit organizations also have IT governance.
 - Successful organizations balance performance objectives with flexible models making decisions that bring out the tensions of standardization vs. IT innovation.



FIGURE 1-3

IT Governance Design Framework

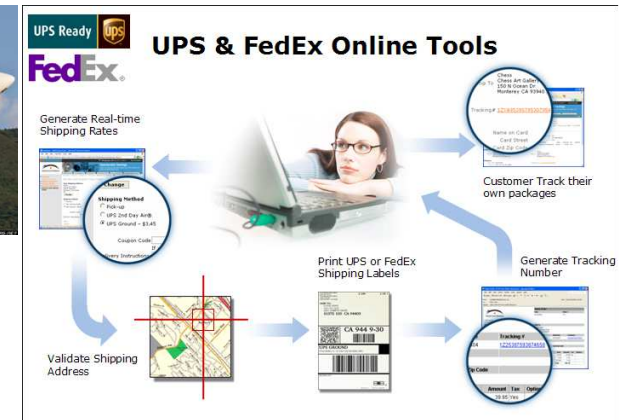


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Harmonization!



Case of Study: UPS



- United Parcel Service
- Competence Federal Express:
- Investment in new IT (11 billion of dollars):
 - New Data center
 - New technical staff
 - Create a global network
 - Development of shared databases
 - Implement apps for a global enterprise
 - Redundancy (disaster management)





Case of Study: UPS

- ... and what else?
 - Ensure that investments generate profits, designing and implementing governance processes on IT
 - IT Steering Committee: role of IT and approve key investments, define the principles of IT:
 - Security
 - Confidence
 - actual costs
 - The consistent customer service
 - Easy access to customer information from your parcel
 - IT Governance Committee: architecture
 - Standards Committee
 - Business leaders: identify priorities
 - Head of Core Processes: customer management, products and packages



FIGURE 1-4

IT Governance at UPS

GOVERNANCE ARCHETYPE	IT Principles		IT Architecture		IT Infrastructure Strategies		Business Application Needs		IT Investment	
	Input	Decision	Input	Decision	Input	Decision	Input	Decision	Input	Decision
Business Monarchy		X								X
IT Monarchy				X		X				
Feudal										
Federal								X	X	
Duopoly	X			X	X		X			

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