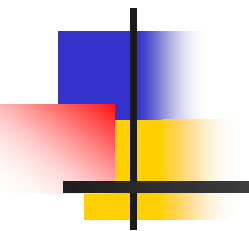




IPID ICT4D PG symposium 2008

September 7-9, Joensuu, Finland



*An Overview of PhD Research Work and the Progress Made on
A Holistic Approach for **IT Governance** in the Public Sector
Organizations in a Developing Country
A Case Study of Tanzania*

*“Stop thinking about IT as an isolated
function - and develop it as an
organizational competency, (Peter
Weill & Jeanne W. Ross, 2004)”*

Edephonc N. Nfuka

nfuka@dsv.su.se

Computer and Systems Sciences Department, Stockholm University, Sweden

Presentation Outline

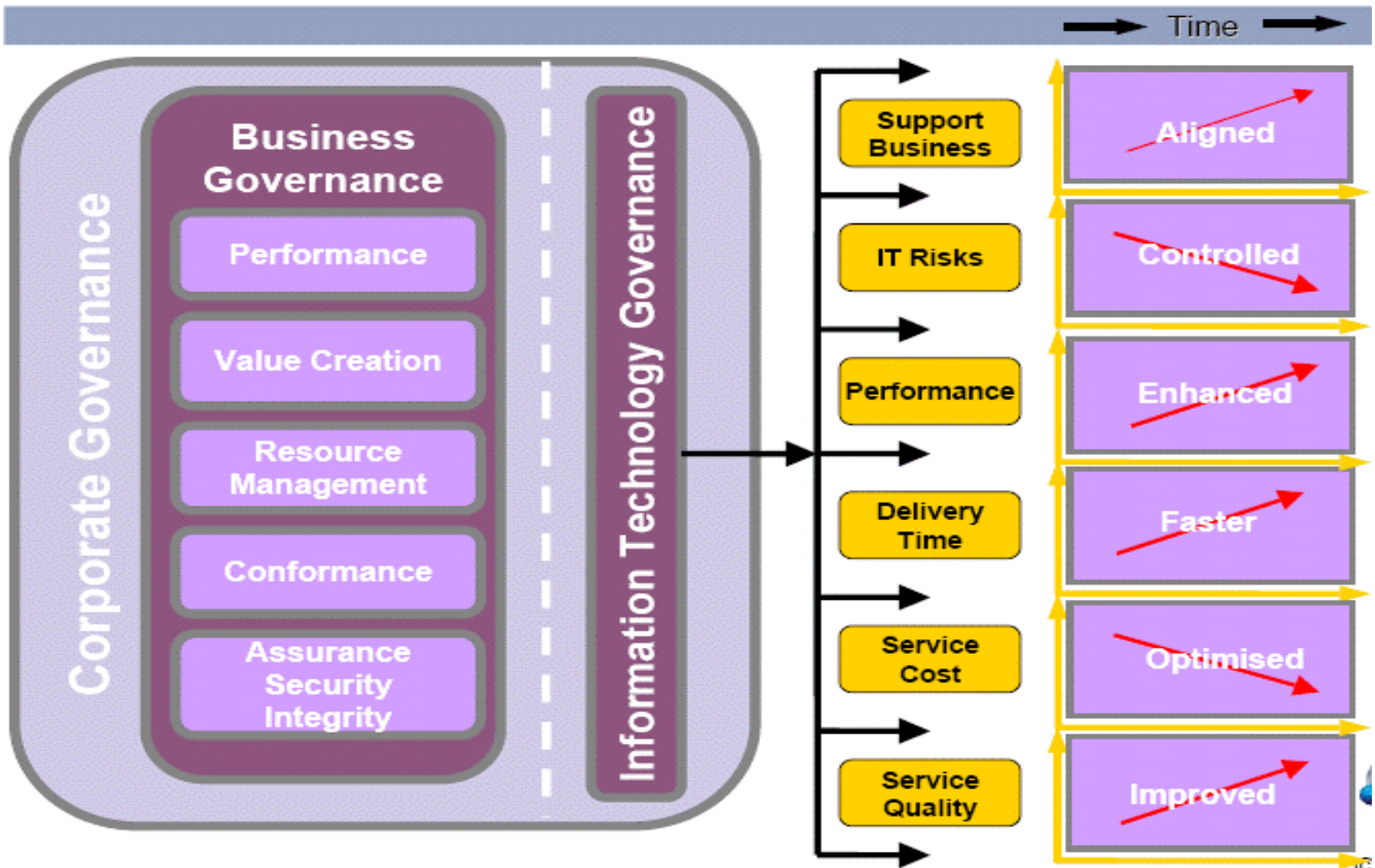
- IT Governance Working Definition
- Understanding IT Governance (ITG)
- Why IT Governance (generally)
- Motivation for a holistic approach to ITG in the Public sector in a developing country
- Proposed research, its setup and the environment
- Research work progress to date
- Conclusion

IT Governance (ITG) Working Defining

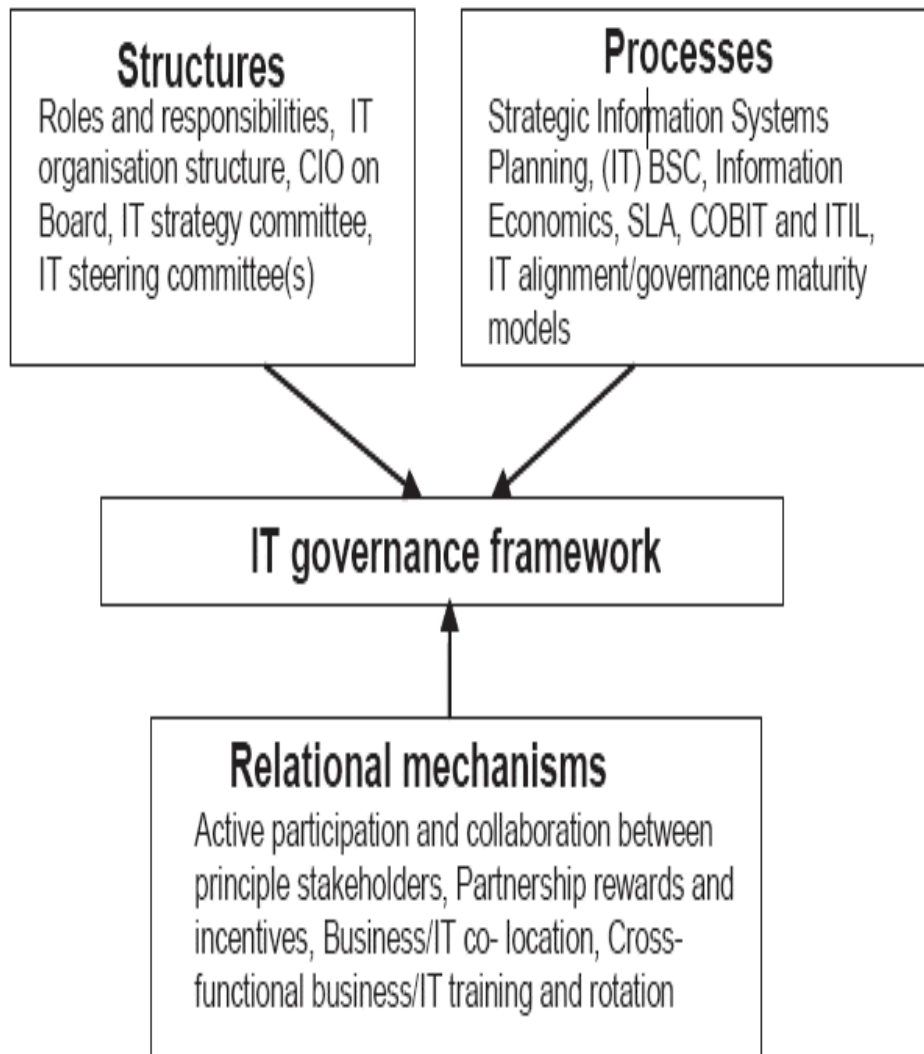
Also called *Enterprise governance of IT*

- Is an integral part of enterprise governance and consists of the *leadership* and organizational *structures* & *processes* that ensure that the enterprise's IT *sustains & extends* organization's strategy and objectives. *(ITGI, 2005)*
- Is about *specifying the decision rights* and *accountability framework* to encourage *desirable behavior in the use of IT* in and among organizations. *(Weill & Ross, 2004)*

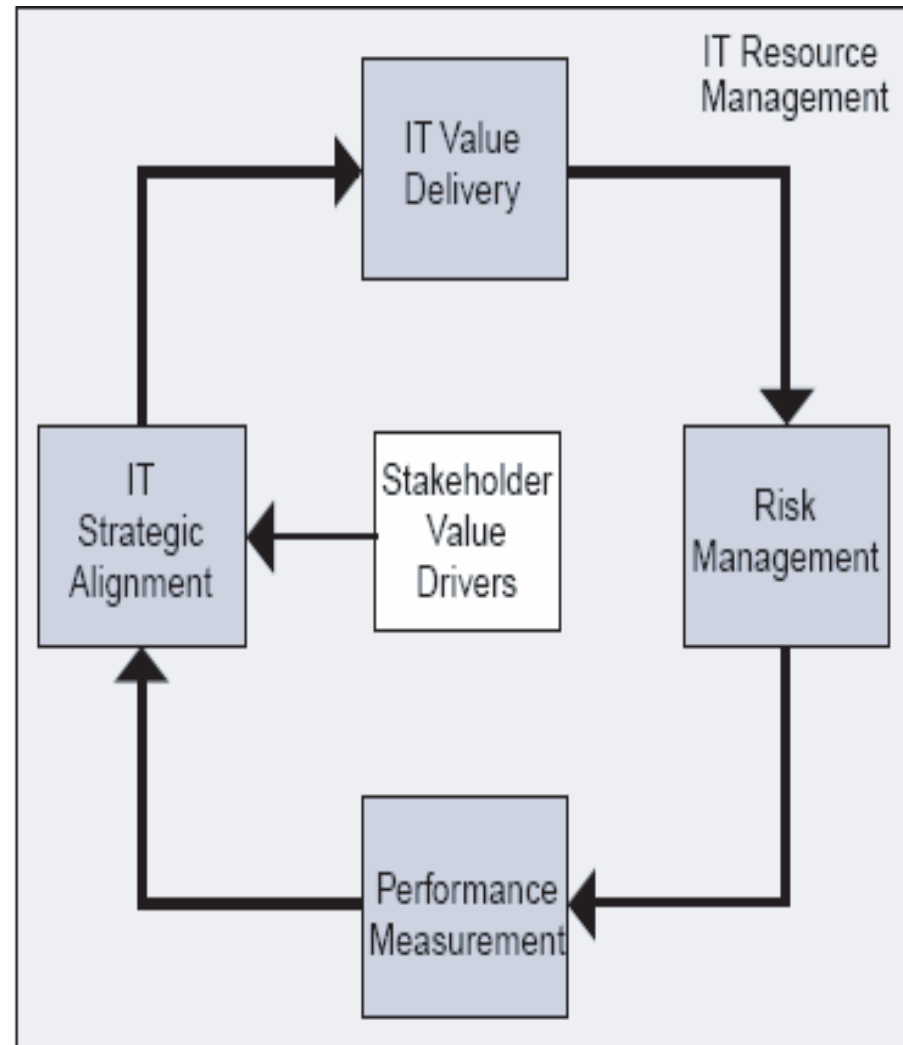
Understanding IT Governance



Understanding of IT Governance



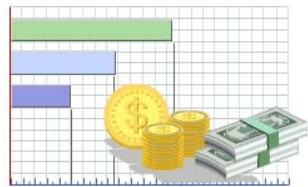
Necessary elements for IT Governance Framework (in Van Grembergen, De Haes, 2007)



Focus areas of IT Governance (ITGI, 2003)

Why IT Governance (Generally)

The need for IT Governance (ITGI, 2007)



Project Execution Time Value/Cost



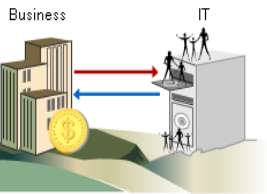
Handling External Relationship

Managing Complexity



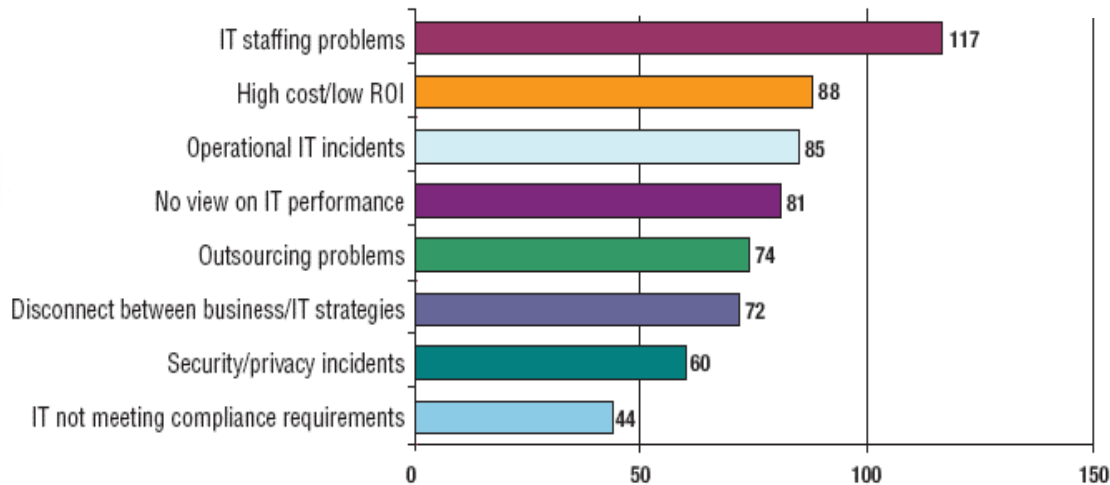
Strategy

Regulatory Compliance



Strategic Alignment

Aligning IT with Business



(Based on 695 respondents of the overall sample)

IT Governance Global Status Report : Major IT related problems (ITGI/PWC 2006)

Others are:

- Potential for working on wrong things
- Business functions move in own IT direction to satisfy its requirements
- Poor communication and relationship among IT and Business people

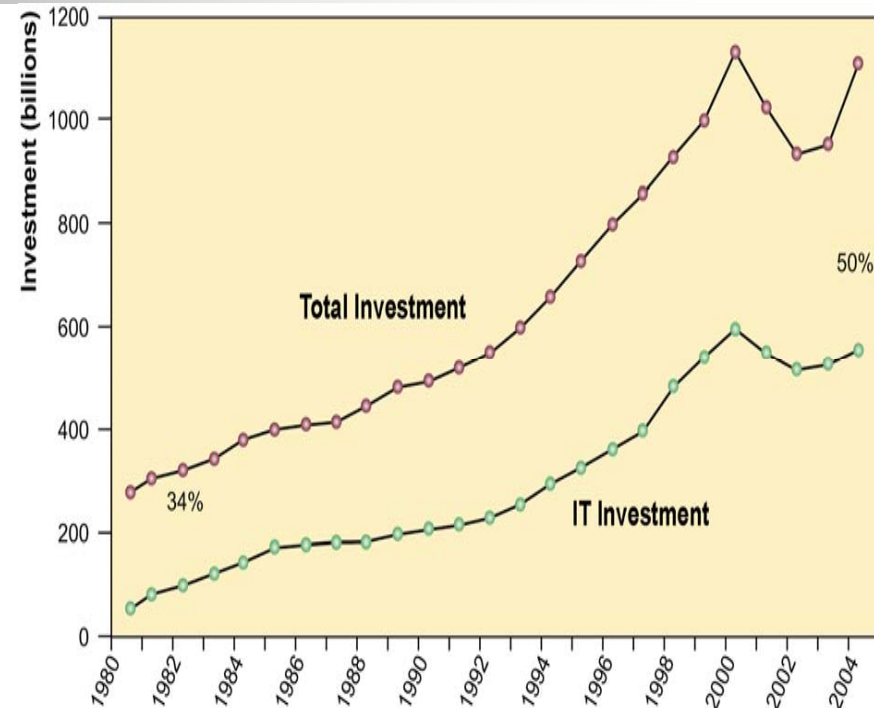
IT Governance chapter (Luftman et al., 2004)

- Chaotic/non-standard IT infrastructure
- Insufficient resources to meet commitments
- Unreliable delivery schedules
- Lack of focus on daily operations
- Reduced quality of delivered projects

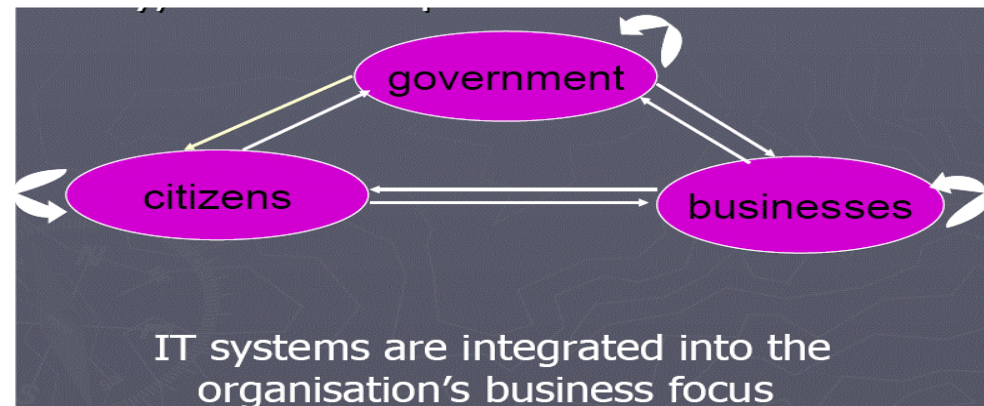
Motivation for a Holistic Approach to ITG in the PS in a DC like Tanzania

PS: Public Sector; DC: Developing Country

- Today, use of IT is pervasive and its investment & use has increased substantially
- This is also happening in a developing country like Tanzania & public sector in specific
- One of the drives is the increased need of quality, cost-effective & faster services delivery to public



Source: Based on data in U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, 2006.

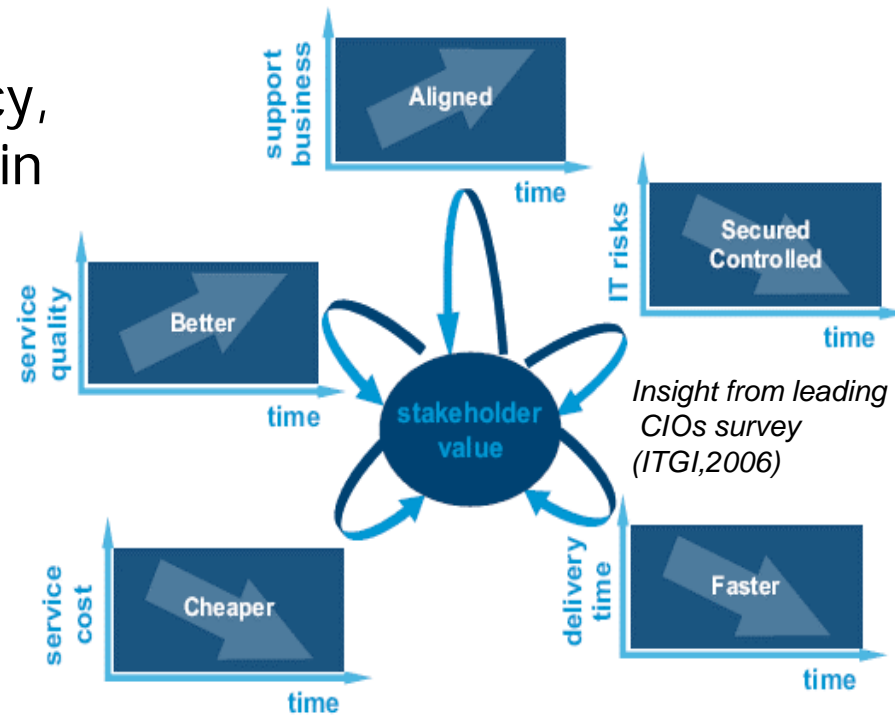


IT Governance and the Public Sector (Subang, 2007)

Motivation for a Holistic Approach to ITG in the PS in a DC like Tanzania

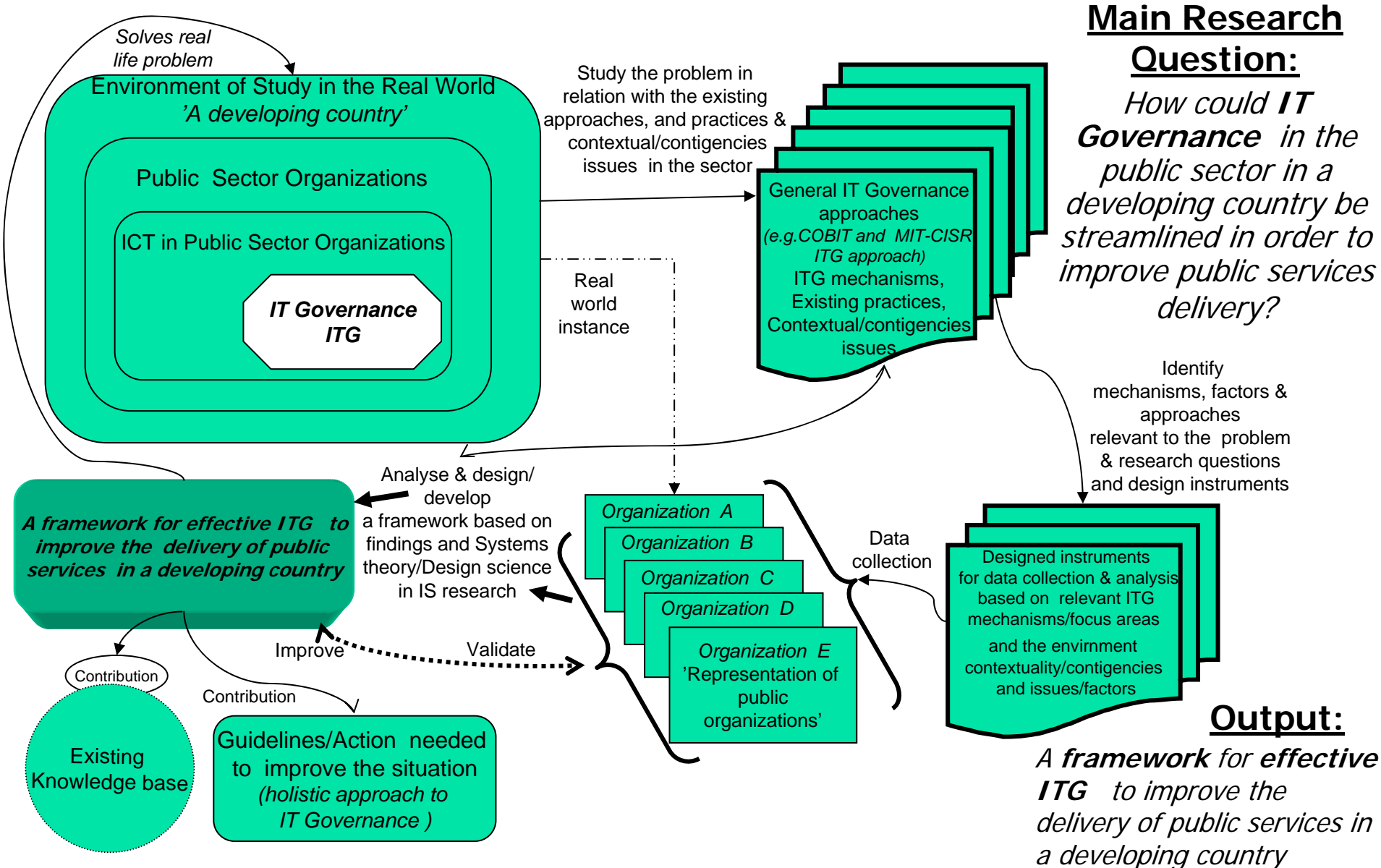
PS: Public Sector; DC: Developing Country

- However its (IT) optimal contribution require the lacking
 - *Guide/leadership* for the strategic integration of ICT into Tanzania's poverty reduction & development framework under which all development efforts are currently coordinated.
 - *Effective mechanisms* for IT activities coordination and optimal use of IT resources in & among public sector organizations, yet in a constantly changing IT environment & citizen/business needs.
 - *Reasonable IT investment* & its optimal usage, operations excellency, controls on costs & risk mitigation in order to deliver stakeholder value.
- The effective design of *a holistic approach to IT Governance in such environment* can provide the *lacking mechanisms* to an optimal ICT contribution & eventually the improvement in the public services delivery.



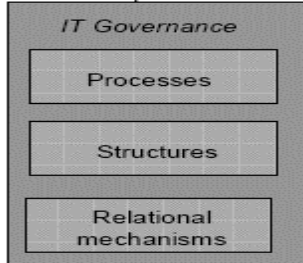
Proposed Research and its Setup

A Holistic Approach for IT Governance in Public Sector Organizations in a Developing Country A Case Study of Tanzania



The Research Questions, Environment & Selected Organizations

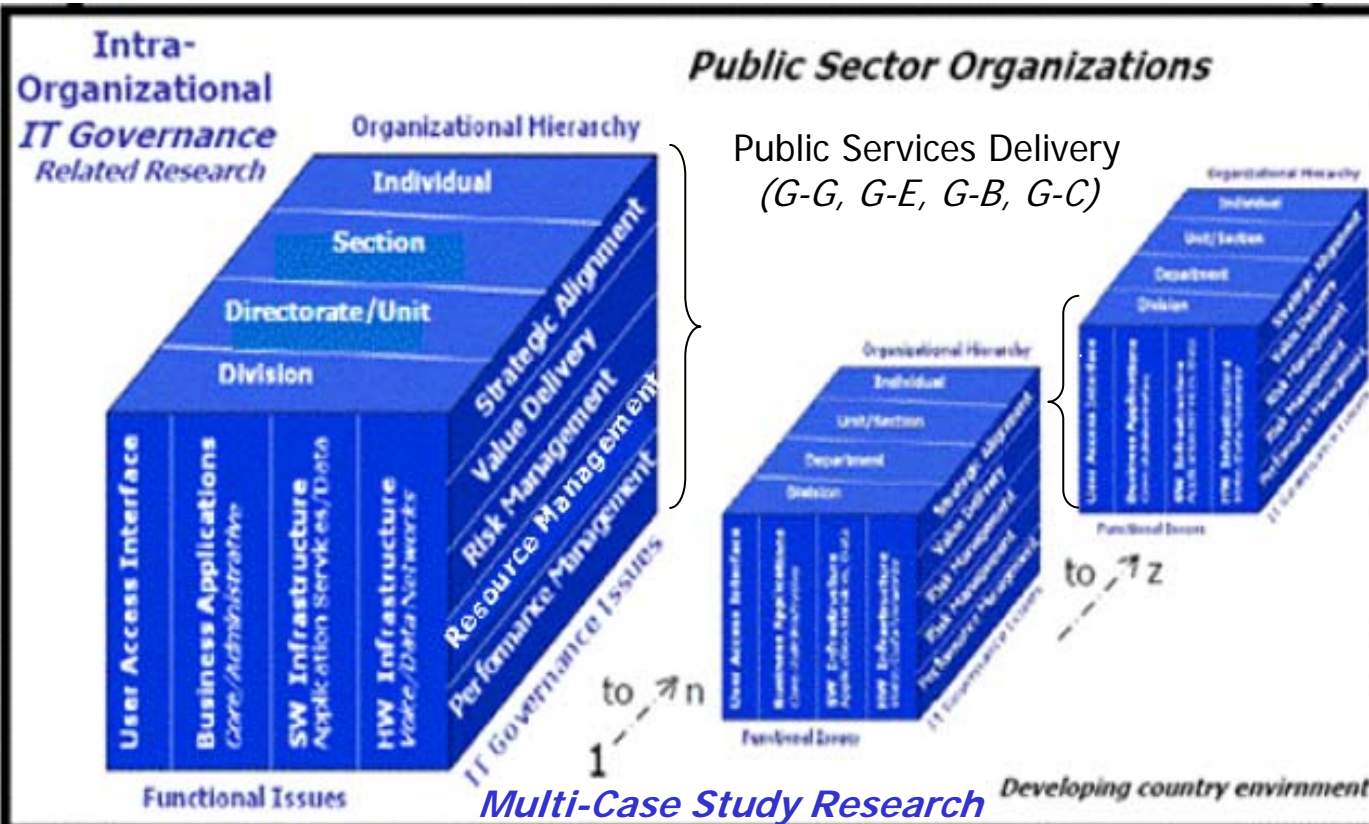
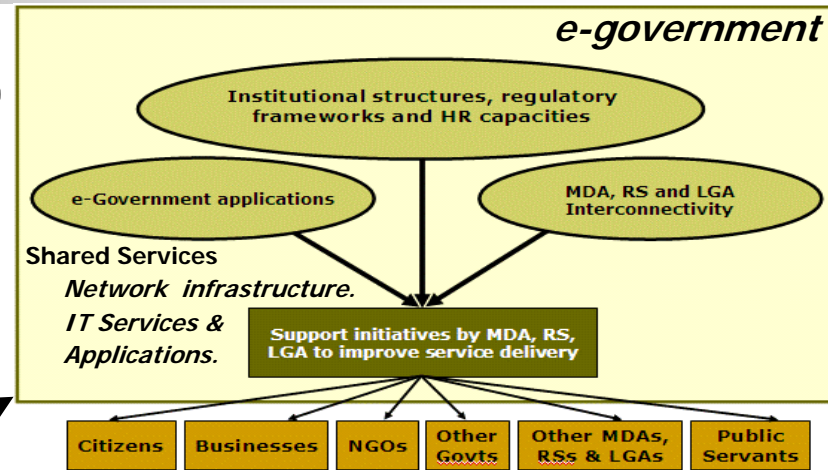
Q1. How is **IT Governance** implemented in the Public sector organizations in a developing country?



improve delivery of public services

Q2. In which ways could **IT Governance** in the public sector organizations in a developing country be streamlined in order to improve public services delivery?

Foundation to e-gov.

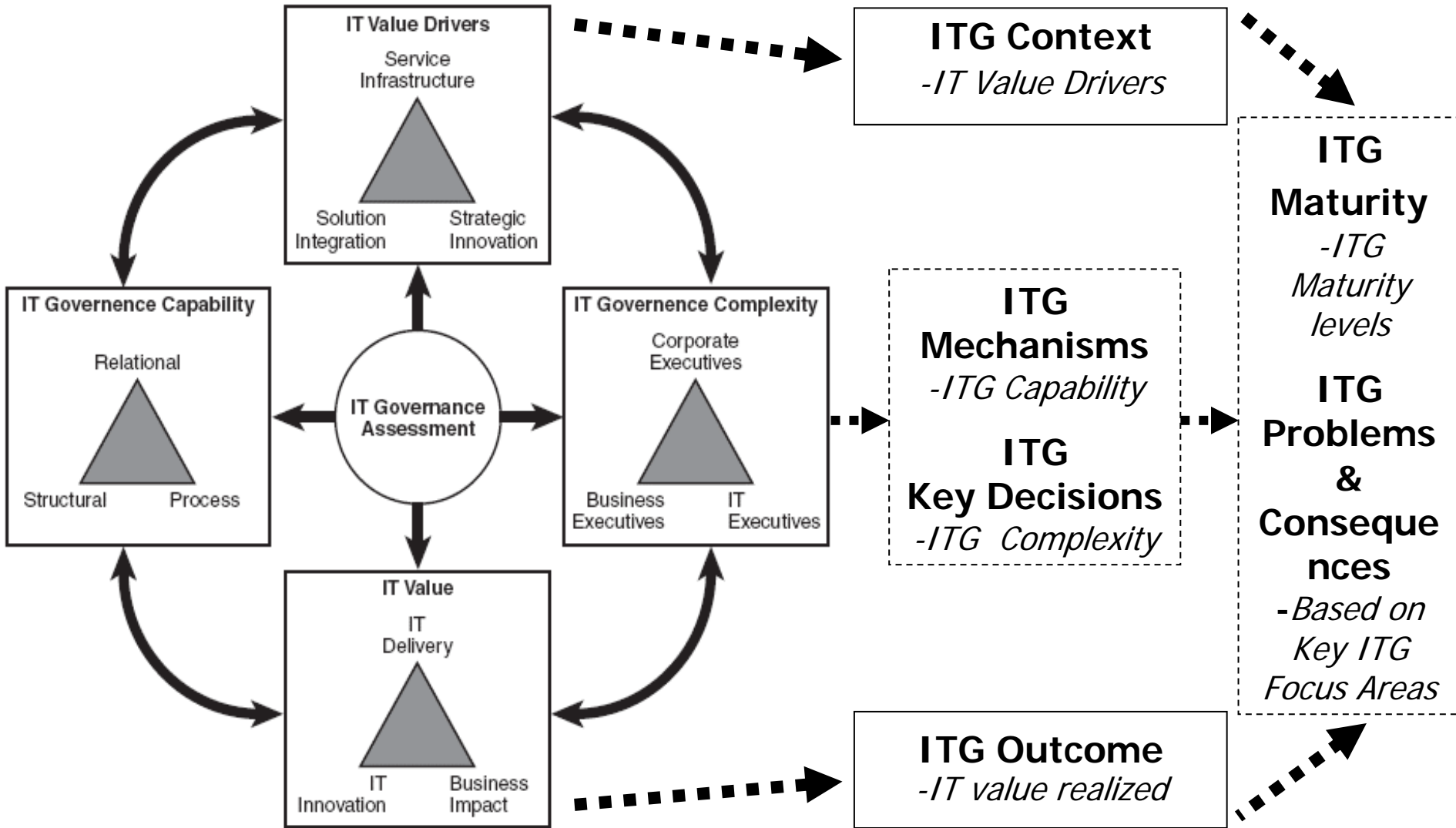


Case Study Organizations:

- TZ Revenue Authority**
Collects central Government Revenues, www.tra.go.tz
- Ministry of Finance**
Manages revenue and expenditure as well as financing of the Government. Also provides advice on the broad financial affairs, www.mof.go.tz
- President Office - Public Service Management**
Manages public service, www.estabs.go.tz
- Medical Store Department**
Furnishes drugs and medical equipment, www.msd.or.tz
- PMO-RALG**
Handles Regional Administration & Local Government matters, www.pmoralg.go.tz

Research Work Progress to Date: Response to 1st Research Question

Q1. How is IT Governance Implemented in the Public Sector Organizations in a Developing Country?



Research Work Progress to Date: Response to 1st Research Question

ITG Mechanisms - *ITG Capability*

■ *ITG mechanisms in practice*

Structures

IT organization Structure (Head reports to CEO and part of management team), **CIO on Board**, Committees (IT Steering and Project based Committees)

Processes

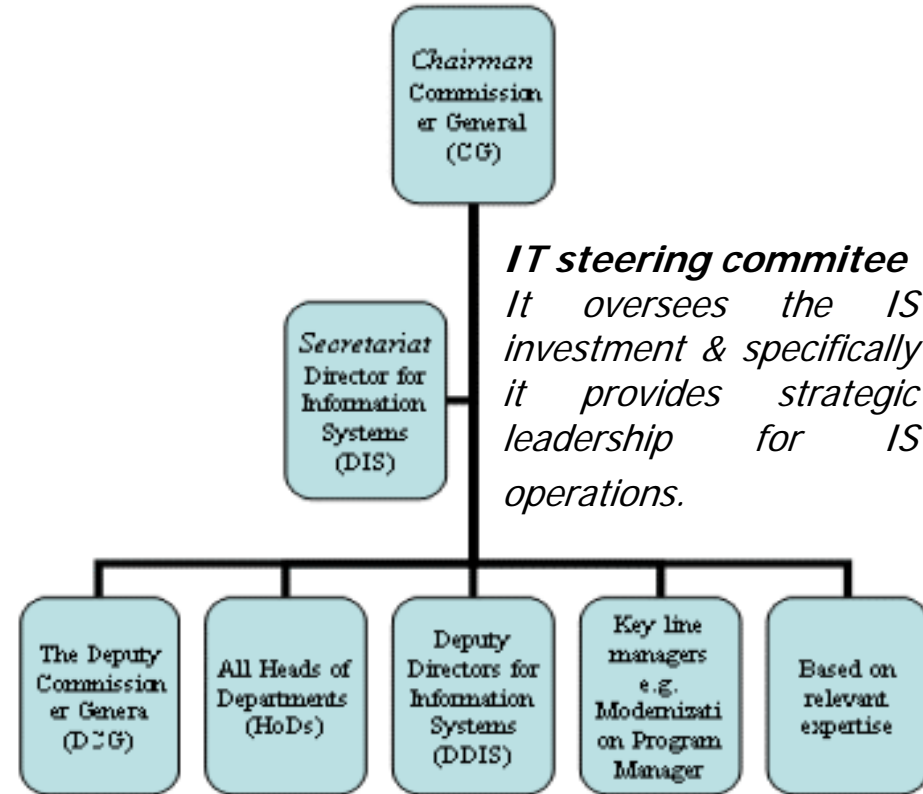
SWOT Analysis, **Balanced scorecard**, Activity Based Costing/ Budgeting (ABC), **COBIT or related IT Governance frameworks**

IT Governance mechanisms

Relational Mechanisms

Shared understanding of business/IT goals, **Shared learning and dialogue**, Informal meetings between business and IT management, **Cross-functional business/IT training**, Performance/ Partnership rewards and incentives

■ *An example of the mechanisms*



Key findings:

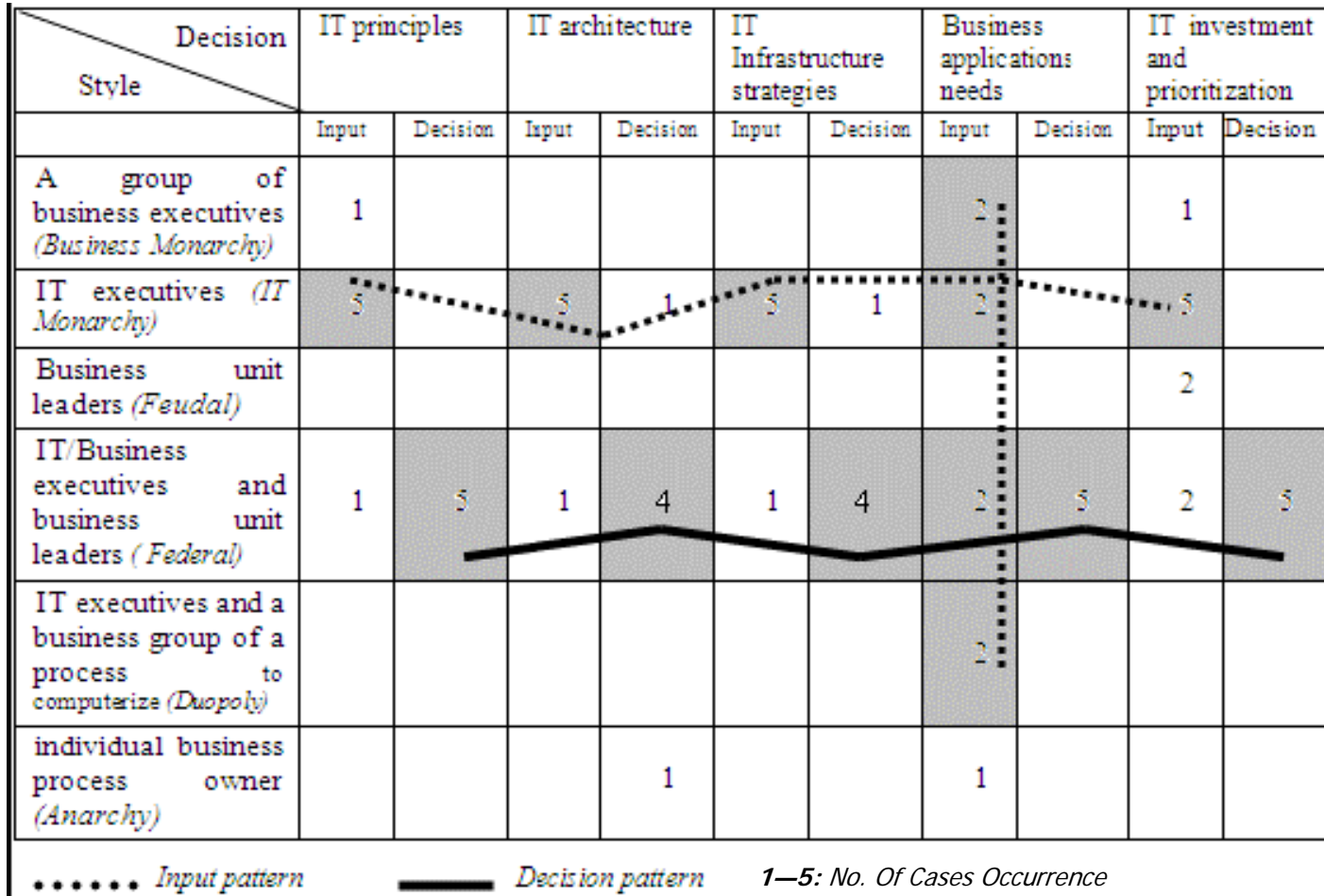
- Strength in supportive IT organization structure but not with IT strategy at all & steering committees in most of them
- Major weakness on processes where best practices and standards on IT strategy, Management & performance management are rarely applied thus inconsistent and lack of enforcement in deployment, use and management of IT.
- Some strengths in relational mechanisms like Informal meetings between business & IT management, but weaknesses including knowledge management, virtual meeting points and performance rewards and incentives.
- These practices continuously done but not as specific ITG projects
- In the international context they are in contrast with related studies in the developed world, which indicated some specific IT Governance projects and applied best practices and standards.

Research Work Progress to Date: Response to 1st Research Question

ITG Key Decisions – ITG Complexity

Key findings:

- Both Decisions & input are mostly distributed across the organization
- Pattern indicates IT to provide most inputs except on Business application needs where it is equally from business groups.
- The decisions are mostly made by executive management and are likely to increase alignment of IT and business and smooth deployment/use of IT



- Looking at related studies like MIT-CISR there are similarities in the pattern especially on decisions where federal dominates in both cases.
- Difference seems to be substantial on input as while IT monarchy dominates most of them, ours indicates to be dominated by Federal.
- Mature IT Governance practice especially on structures might be one of the determinants of the differences & required governance effectiveness.

ITG Maturity – Quick ITG Performance

Figure 1: Assess Your IT Governance Performance

1. Question: How important are the following outcomes of your IT governance on a scale from 1 (not important) to 5 (very important)?

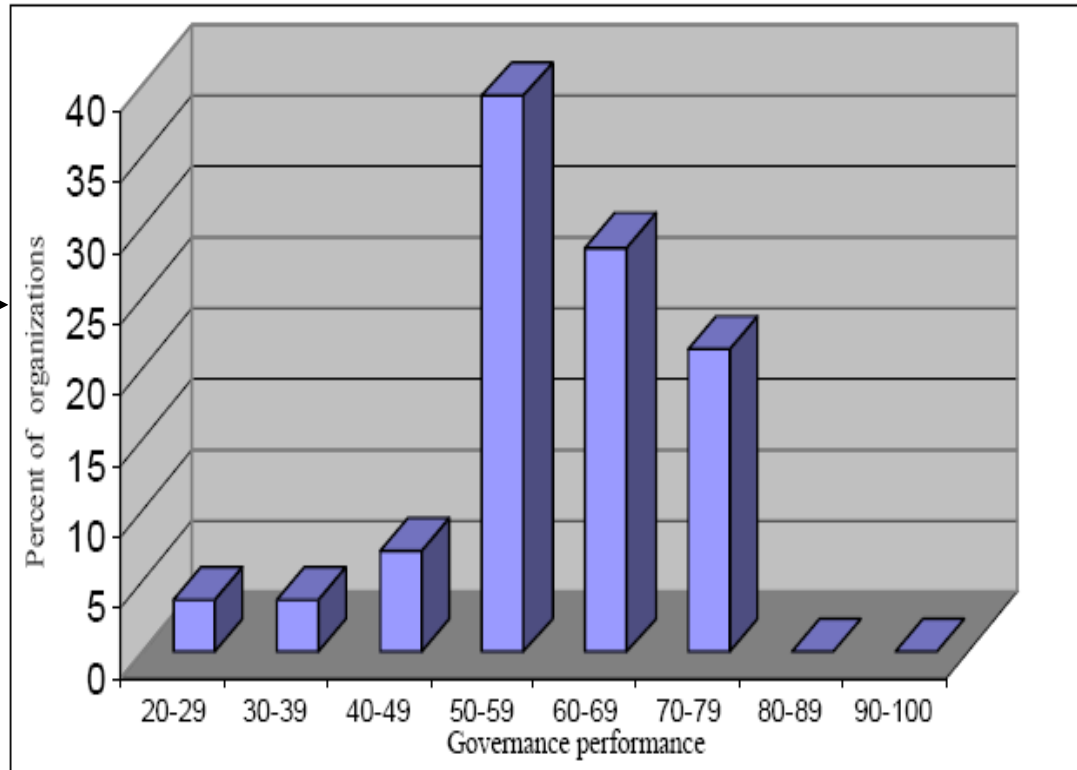
2. Question: What is the influence of the IT governance in your business on the following measures of success on a scale from 1 (not successful) to 5 (very successful)?

a. Cost effective use of IT	<input checked="" type="radio"/>	X	<input type="radio"/>	=	<input type="checkbox"/>
b. Effective use of IT for growth	<input checked="" type="radio"/>	X	<input type="radio"/>	=	<input type="checkbox"/>
c. Effective use of IT for asset utilization	<input checked="" type="radio"/>	X	<input type="radio"/>	=	<input type="checkbox"/>
d. Effective use of IT for business flexibility	<input checked="" type="radio"/>	X	<input type="radio"/>	=	<input type="checkbox"/>
Importance Total =	<input checked="" type="radio"/>				Total = <input type="checkbox"/>

3. Calculate governance performance: $(\text{Total} \times 100) \div (5 \times \text{Importance Total}) = \square$

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ITG (Weill and Ross, 2004)

Key findings:

- This indicates an existence of IT governance mechanisms that works.
- It provides alarm to continue devising the governance mechanisms for optimal IT contribution.
- Such devising, can include improvement in cost effective use of IT and use of IT for asset utilization that contributed to a relatively lower percentages in this quick performance.
- From international context like the study of Weill and Ross, 2004, performance is relatively lower.
- The difference in performance seems consistent with the level of ICT deployment and constrains in the public sector in a developing country.

Research Work Progress to Date: Response to 1st Research Question

ITG Maturity

– *ITG Maturity Levels*

Non-existent Initial/
Ad Hoc Repeatable
but Intuitive Defined
Process Managed and
Measurable Optimised



LEGEND FOR SYMBOLS USED

LEGEND FOR RANKINGS USED

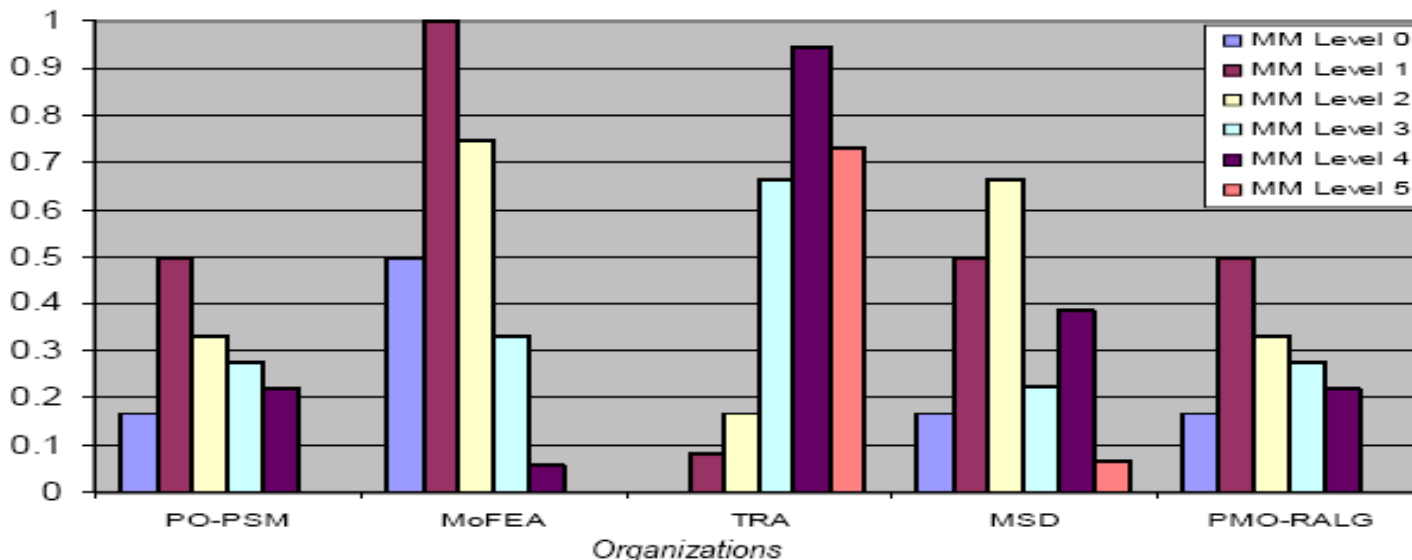
- Enterprise current status
- Industry average
- Enterprise target

- 0—Management processes are not applied at all.
- 1—Processes are *ad hoc* and disorganised.
- 2—Processes follow a regular pattern.
- 3—Processes are documented and communicated.
- 4—Processes are monitored and measured.
- 5—Good practices are followed and automated.

Generic Maturity Model (ITGI, 2000)

No.	Abbreviation	IT Process Name	Domain
1	PO1	Define a Strategic IT Plan	Planning and Organization (PO)
2	PO3	Determine Technological Direction	
3	PO4	Define the IT Processes, Organisation and Relationships <i>(In earlier study were indicated as DS10)</i>	
4	PO5	Manage the IT Investment	
5	PO6	Communicate Management Aims and Direction <i>(In earlier study were indicated as AI5)</i>	
6	PO9	Assess and Manage IT Risks	
7	PO10	Manage Projects	
8	AI1	Identify Automated Solutions	Acquire and Implement (AI)
9	AI2	Acquire and Maintain Application Software	
10	AI6	Manage Changes	
11	DS1	Define and Manage Service Levels	Delivery and Support (DS)
12	DS4	Ensure Continuous Service	
13	DS5	Ensure Systems Security	
14	DS11	Manage Data	
15	ME1	Monitor and Evaluate IT Performance	Monitoring & Evaluation (ME)

Sample Maturity Level: Define a Strategic Plan (PO1)

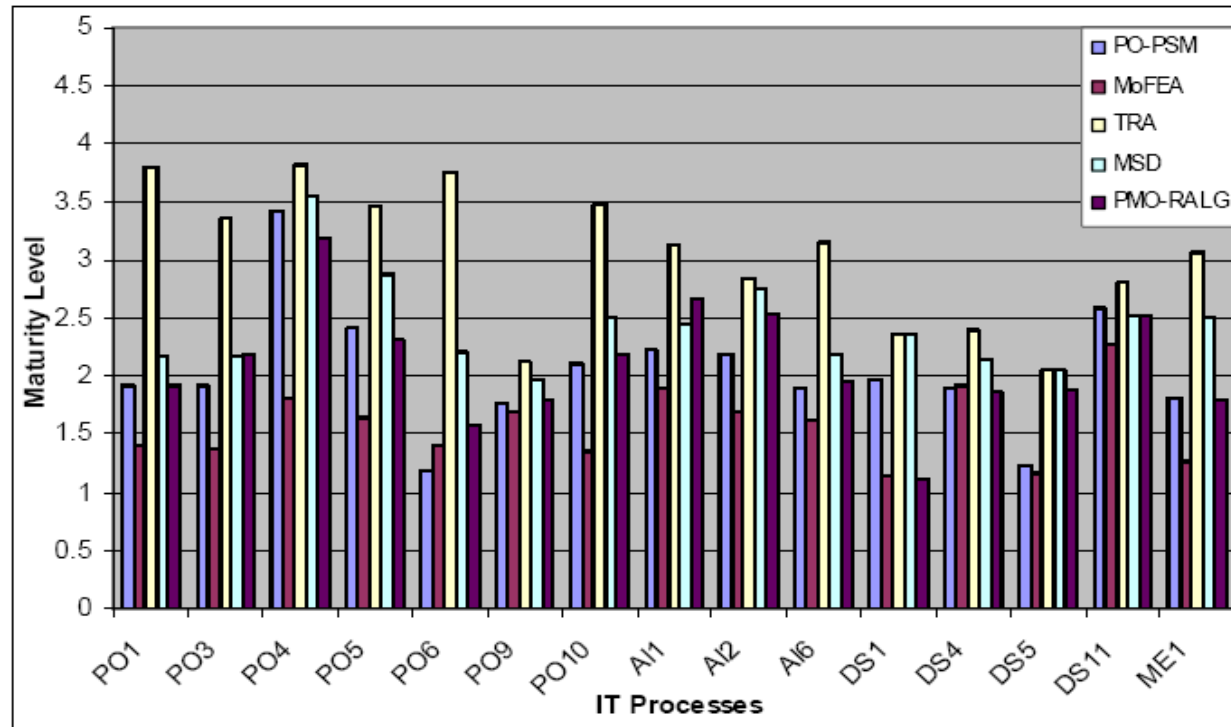


Research Work Progress to Date: Response to 1st Research Question

ITG Maturity: *ITG Maturity Levels*

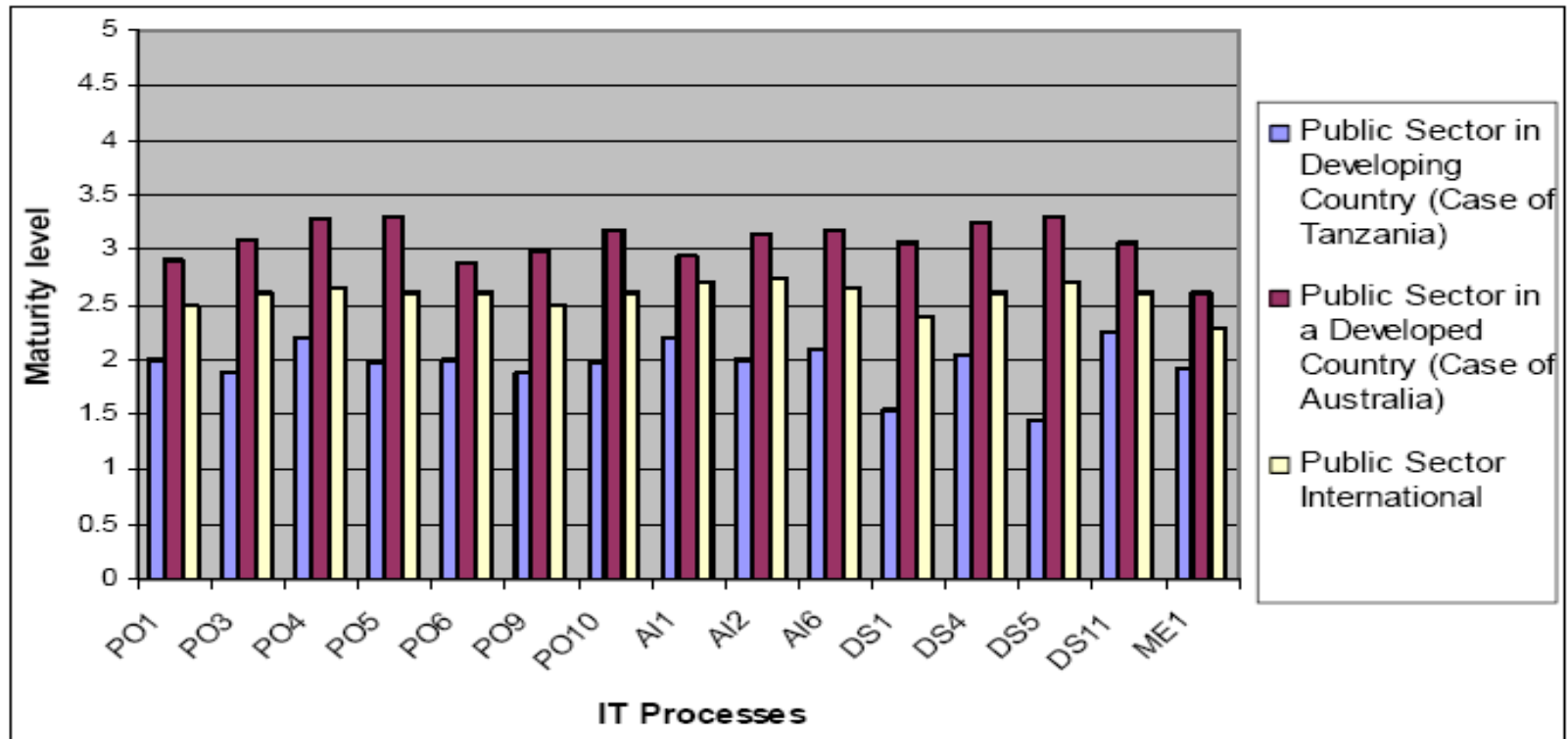
Key findings:

- The organizations with relatively higher combination of ITG mechanisms are far higher in maturity results e.g. TRA leads with the average of maturity level 3 while others at 2 & 1
- Some processes have more issues to be solved than others e.g. assessing & managing IT Security (PO9) like controls & mitigation strategies.



- Also defining and managing services levels (DS1) is low due to the absence of the internal SLAs, thus hampering timely intervention on service provided
- The average maturity level in the sector is 1.95 with majority in a range of 1 to 2.5 to be on initial stage in governance of IT thus most of the processes still ad-hoc with elements of repeatability but intuitively
- On the lower end management recognizes the need of standardized processes but still there are ad-hoc approaches
- On the higher end processes have developed to the stage where similar procedures are followed by different people undertaking the same task but still there are degree of reliance on the knowledge of individuals and therefore errors are likely

ITG Maturity: *ITG Maturity Levels*



Key findings:

- Taking international perspective e.g. on comparison of Public sector in Australia and Public sector internationally, our results seems to be relatively lower to both cases.
- For example Define Strategic IT Plan(PO1), determining technology direction (PO3) and managing projects (PO10) which are important in the sector are relatively lower.
- This is consistency with the findings in the sector as for example only one organization among the studied organizations is using the best practices like ITIL for IT Management and PRINCE2 for project management.

Research Work Progress to Date: Response to 1st Research Question

ITG Problems - *Based on Key ITG Focus Areas*

Key findings:

Strategic Alignment

- No specific IT strategic plan in most of them to tie the business and IT activities more holistically and effectively.
- Lack of ownership by business people in IT-enabled projects
- Inadequate or absent ICT policies and procedures
- Lack of IT Governance awareness and guidelines
- Lack of clear roles, responsibilities & accountability
- Inadequate enforcement mechanisms for widespread use of ICT/promised benefits

Value delivery

- High cost of IT but still lower return/business value.
- Non-optimal use of IT and missing synergies

Risk Management

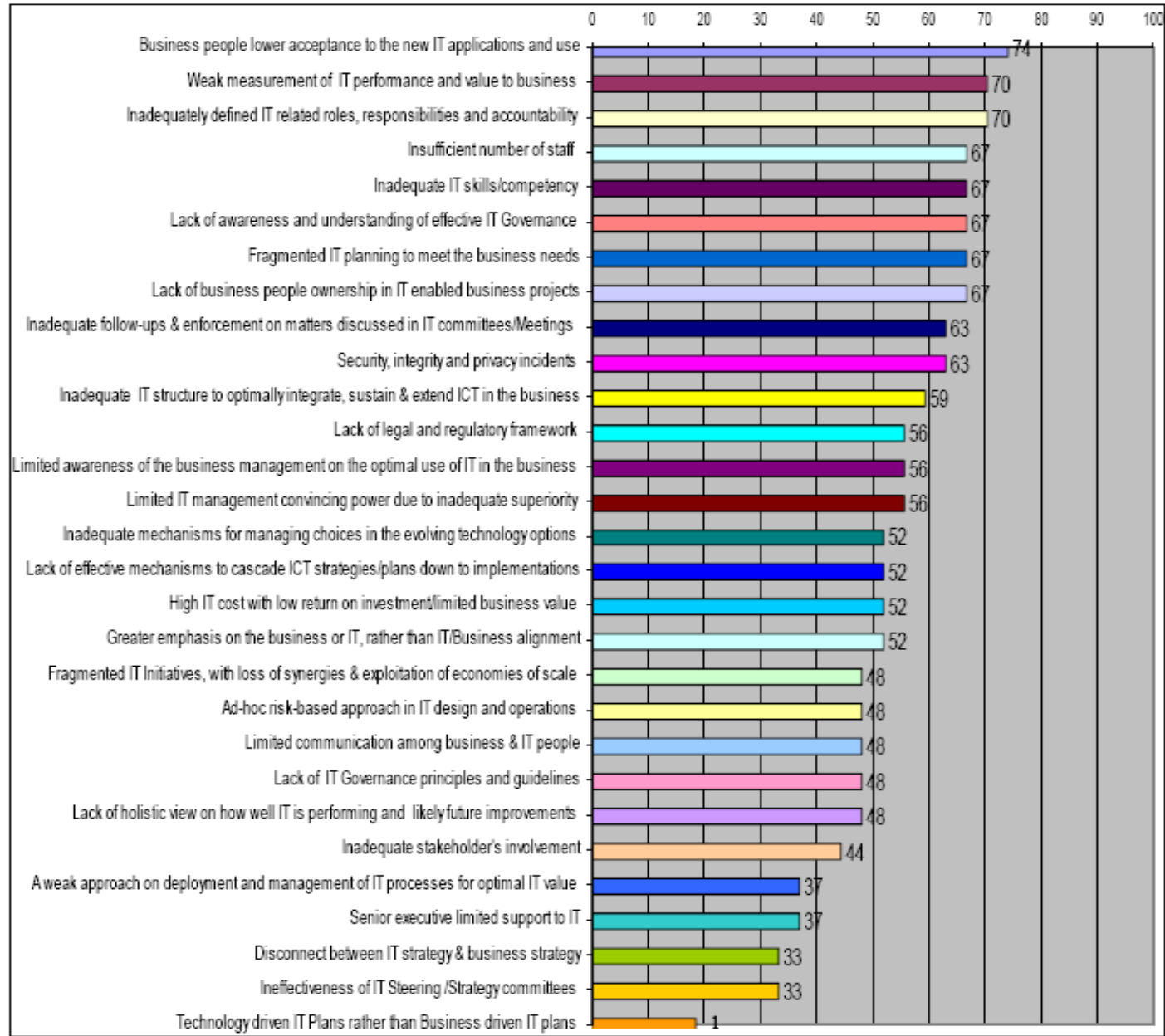
- Weak risk-based approach in designing/operating IT services

Resource Management

- Attracting & sustaining skilled and competent IT personnel
- Availability of essential budget for the required IT resources
- Fragmented IT initiatives with duplication of efforts & loss of synergies/economies of scale

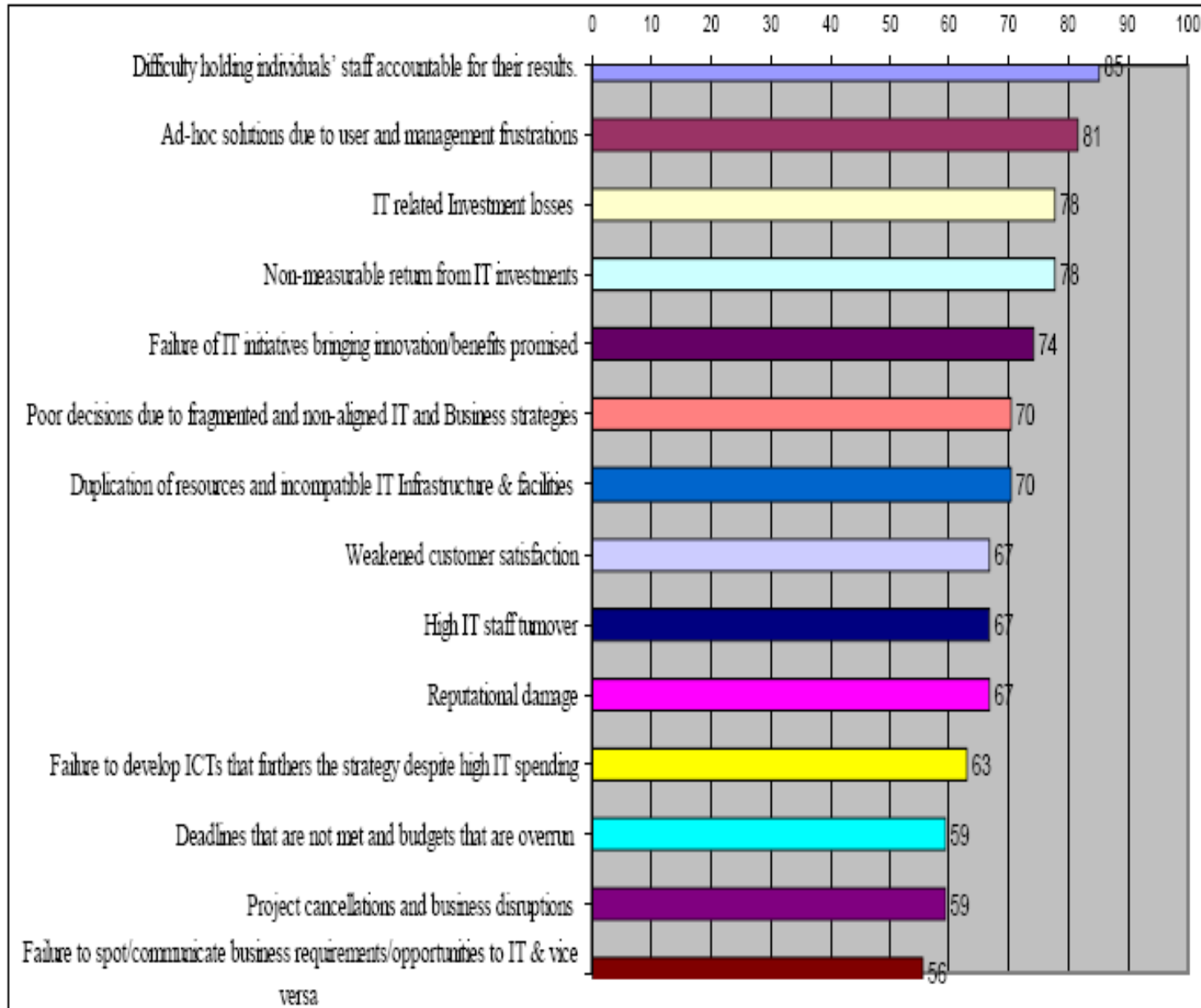
Performance Management

- Lack of holistic view on how well IT is performing



Research Work Progress to Date: Response to 1st Research Question

ITG Consequences



Key findings:

- Difficulties on holding individuals accountable for their results.
- Ad-hoc solutions due to user and management frustrations & not having good IT governance in place
- People finding their own solutions and taking this loophole to misuse the IT resources.
- IT investment losses of higher magnitude given systems put in place in such organizations
- Reputation damages

Conclusion

- The presentation briefly described IT Governance as Issue in the organizations and Understanding of IT Governance today.
- It indicated that an effective IT governance is also paramount in the public sector in a developing country for alignment of IT and business and eventually an optimization of the IT value/Contribution to the business while mitigating the risks.
- The research has been designed based on two main questions; how is IT Governance implemented in the Public sector organizations in a developing country and in which ways could it be streamlined in order to improve public services delivery.
- It is expected that by responding them the research will contribute to the *knowledge base* and *be useful in a developing country* where demand and use of ICT in provision of public services is rapidly increasing and its effective management/governance becoming critical.
- Meanwhile it was also shown that the 1st research question has been worked out using five public sector organizations and the responses indicate that there are many issues in existing IT Governance practice notably in processes that need to be streamlined to further improve the public services delivery.