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)”

Edephonce 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 (Broadhurst, 2006)
Understanding of IT Governance

**Structures**
- Roles and responsibilities, IT organisation structure, CIO on Board, IT strategy committee, IT steering committee(s)

**Processes**
- Strategic Information Systems Planning, (IT) BSC, Information Economics, SLA, COBIT and ITIL, IT alignment/governance maturity models

**IT governance framework**

**Relational mechanisms**
- Active participation and collaboration between principle stakeholders, Partnership rewards and incentives, Business/IT co-location, Cross-functional business/IT training and rotation

**Focus areas of IT Governance (ITGI, 2003)**

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

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

Other reasons include:

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


IT systems are integrated into the organisation’s business focus.

IT Governance and the Public Sector (Subang, 2007)
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.

- 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.

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

*PS: Public Sector; DC: Developing Country*
Proposed Research and its Setup

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

Main Research Question:
How could IT Governance in the public sector in a developing country be streamlined in order to improve public services delivery?

Environment of Study in the Real World
'A developing country'

Public Sector Organizations

ICT in Public Sector Organizations

IT Governance (ITG)

General IT Governance approaches (e.g. COBIT and MIT-CISR ITG approach)
ITG mechanisms, Existing practices, Contextual/contingencies issues

Designed instruments for data collection & analysis based on relevant ITG mechanisms/focus areas and the environment contextuality/contingencies and issues/factors

Guidelines/Action needed to improve the situation (holistic approach to IT Governance)

Existing Knowledge base

Contribution

Solves real life problem

Study the problem in relation with the existing approaches, and practices & contextual/contingencies issues in the sector

Analyse & design/develop a framework based on findings and Systems theory/Design science in IS research

Data collection

Organization A
Organization B
Organization C
Organization D
Organization E
'Representation of public organizations'

A framework for effective ITG to improve the delivery of public services in a developing country

Contribution

Output:
A framework for effective ITG to improve the delivery of public services in a developing country
Q1. How is IT Governance implemented in the Public sector organizations in a developing country?

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?

Case Study Organizations:

1. TZ Revenue Authority
   Collects central Government Revenues, [www.tra.go.tz](http://www.tra.go.tz)

2. 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](http://www.mof.go.tz)

3. President Office - Public Service Management
   Manages public service, [www.estabs.go.tz](http://www.estabs.go.tz)

4. Medical Store Department
   Furnishes drugs and medical equipment, [www.msd.or.tz](http://www.msd.or.tz)

5. PMO-RALG
   Handles Regional Administration & Local Government matters, [www.pmoralg.go.tz](http://www.pmoralg.go.tz)
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**

**IT steering committee**
It oversees the IS investment & specifically it provides strategic leadership for IS operations.

**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.
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.
**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

<table>
<thead>
<tr>
<th>Non-existent</th>
<th>Initial/Ad Hoc</th>
<th>Repeatable but Intuitive</th>
<th>Defined Process</th>
<th>Managed and Measurable</th>
<th>Optimised</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

**Legend for Symbols Used**
- Enterprise current status
- Industry average
- Enterprise target

**Legend for Rankings Used**
- 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)

<table>
<thead>
<tr>
<th>No.</th>
<th>Abbreviation</th>
<th>IT Process Name</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PO1</td>
<td>Define a Strategic IT Plan</td>
<td>Planning and Organization (PO)</td>
</tr>
<tr>
<td>2</td>
<td>PO3</td>
<td>Determine Technological Direction</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PO4</td>
<td>Define the IT Processes, Organisation and Relationships (In earlier study were indicated as DS10)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>PO5</td>
<td>Manage the IT Investment</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>PO6</td>
<td>Communicate Management Aims and Direction (In earlier study were indicated as A15)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>PO9</td>
<td>Assess and Manage IT Risks</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>PO10</td>
<td>Manage Projects</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>A11</td>
<td>Identify Automated Solutions</td>
<td>Acquire and Implement (AI)</td>
</tr>
<tr>
<td>9</td>
<td>A12</td>
<td>Acquire and Maintain Application Software</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>A16</td>
<td>Manage Changes</td>
<td>Delivery and Support (DS)</td>
</tr>
<tr>
<td>11</td>
<td>DS1</td>
<td>Define and Manage Service Levels</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>DS4</td>
<td>Ensure Continuous Service</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>DS5</td>
<td>Ensure Systems Security</td>
<td>Monitoring &amp; Evaluation (ME)</td>
</tr>
<tr>
<td>14</td>
<td>DS11</td>
<td>Manage Data</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>ME1</td>
<td>Monitor and Evaluate IT Performance</td>
<td></td>
</tr>
</tbody>
</table>

**Sample Maturity Level: Define a Strategic Plan (PO1)**

[Graph showing maturity levels for different organizations]
Research Work Progress to Date: Response to 1st Research Question

**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
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.
### 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.

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### ITG Problems - Based on Key ITG Focus Areas

<table>
<thead>
<tr>
<th>Problem Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business people lower acceptance to the new IT applications and use</td>
<td>74%</td>
</tr>
<tr>
<td>Weak measurement of IT performance and value to business</td>
<td>70%</td>
</tr>
<tr>
<td>Inadequately defined IT related roles, responsibilities and accountability</td>
<td>70%</td>
</tr>
<tr>
<td>Insufficient number of staff</td>
<td>67%</td>
</tr>
<tr>
<td>Inadequate IT skills/competency</td>
<td>67%</td>
</tr>
<tr>
<td>Lack of awareness and understanding of effective IT Governance</td>
<td>67%</td>
</tr>
<tr>
<td>Inadequate planning for IT to meet the business needs</td>
<td>67%</td>
</tr>
<tr>
<td>Lack of business people ownership in IT enabled business projects</td>
<td>67%</td>
</tr>
<tr>
<td>Limited awareness of the business management on the optimal use of IT in the business</td>
<td>63%</td>
</tr>
<tr>
<td>Limited IT management control due to inadequate strategies</td>
<td>63%</td>
</tr>
<tr>
<td>Inadequate mechanisms for managing choices in the evolving technology options</td>
<td>69%</td>
</tr>
<tr>
<td>Lack of effective mechanisms to cascade ICT strategies/plans down to implementations</td>
<td>69%</td>
</tr>
<tr>
<td>High IT cost with low return on investment/limited business value</td>
<td>66%</td>
</tr>
<tr>
<td>Greater emphasis on the business or IT, rather than IT/Business alignment</td>
<td>66%</td>
</tr>
<tr>
<td>Fragmented IT initiatives, with loss of synergies &amp; exploitation of economies of scale</td>
<td>56%</td>
</tr>
<tr>
<td>Ad-hoc risk-based approach in IT design and operations</td>
<td>52%</td>
</tr>
<tr>
<td>Limited communication among business &amp; IT people</td>
<td>52%</td>
</tr>
<tr>
<td>Lack of IT Governance principles and guidelines</td>
<td>52%</td>
</tr>
<tr>
<td>Lack of holistic view on how well IT is performing and likely future improvements</td>
<td>52%</td>
</tr>
<tr>
<td>Inadequate stakeholder’s involvement</td>
<td>48%</td>
</tr>
<tr>
<td>A weak approach on deployment and management of IT processes for optimal IT value</td>
<td>48%</td>
</tr>
<tr>
<td>Senior executive limited support to IT</td>
<td>48%</td>
</tr>
<tr>
<td>Disconnect between IT strategy &amp; business strategy</td>
<td>38%</td>
</tr>
<tr>
<td>Ineffectiveness of IT Steering/Strategy committees</td>
<td>38%</td>
</tr>
<tr>
<td>Technology driven IT Plans rather than Business driven IT plans</td>
<td>33%</td>
</tr>
</tbody>
</table>
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.**

![Chart showing ITG Consequences]
Conclusion

- The presentation briefly described IT Governance as an 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.