

THE REALITY OF DECISION MAKING ON ICT STRATEGIES THROUGH THE APPLICATION OF ICT GOVERNANCE

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Abstract

Today, investment on Information and Communication Technology (ICT) solutions in most organizations is the largest component of capital expenditure. In the United States alone, the capital expenditure on ICT equipment and infrastructure in 2005 estimated to have reached \$1.8 trillion.

As capital investment on ICTs continues to grow, ICT managers and strategists are expected to develop and put in practice effective decision making models (frameworks) that improve decision-making processes (for the use of ICTs in organizations) and optimize the investment on ICT solutions. To be exact, there is an expectation that organizations not only maximize the benefits of adopting ICT solutions but also avoid the many pitfalls that are associated with rapid introduction of technological change. This paper elaborates on decision making processes for strategic use of ICTs within organizations. More specifically, it examines ICT governance as a tool for decision making about ICT strategies. Discussions in this paper are based on a recent study of two focus groups of organizations that represented various industries.

Key words - Information and Communications Technology (ICT), Decision Making Process, Aligning ICT with Business, ICT Governance, Strategic Planning

1. Introduction: Strategic Decision Making to Maximize the Benefits of ICTs

Today, access to Information and Communication Technologies (ICTs) plays an essential role in both economic and social development. As a consequence, recently, we have witnessed an ongoing stream of ICT and e-technology solutions contributing towards a significant transformation of both private and public sectors' business processes management worldwide.

The competitive imperative of the private sector has driven businesses into the digital world. Many organizations worldwide, consider ICTs as being essential for setting up competitive businesses, managing global corporations, adding business value and providing valued products and/or services to their potential markets [12]. Within the last decade, investment on ICTs in most organizations has become the largest component of capital expenditure. In the United States alone, the capital expenditure on ICT equipment and infrastructure in 2005 estimated to have reached \$1.8 trillion: [10] [11]. The percentage of ICT capital expenditure expanded from 19% (of the total business investments) in 1980 to 35% in 2003 (source: US Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts).

As capital investment on ICT within corporations continues to grow, there is an expectation that senior ICT managers and strategists optimize the investment on technology. They are required to not only maximize the benefits that are offered (through the application of ICTs and other technology solutions) but also avoid the many pitfalls and risks (economical, social and cultural) that are associated with rapid technological change. Strategy planning and governance of ICT solutions has become a critical component of decision making for managing organizations' portfolio of technology solutions.

Today, the essence of planning for ICTs is to maximize return on ICT investment – often achieved through aligning the application of ICT solutions with that of organization's business strategy. The capital expenditure (budget) considered for ICT solutions (and operations) is often limited. At the same time, within any organization, there are often numerous ICT

project initiatives (or ICT direction concepts) from various business units for the ways in which ICT solutions should be deployed. These initiatives need to be considered in order to determine how the limited ICT budget is allocated to projects. Within most organizations, the portfolio of these selected projects/ideas is interpreted as the collective organizational ICT strategy. ICT governance (the mechanism that is considered for filtering projects/ideas and determining a selected portfolio) plays a significant role in determining organization's future ICT strategies.

In this paper, the term “*governance*” is referred to the collection of processes, assessment techniques, strategy and project evaluation criteria and the discipline for linking ICT project ideas to business direction. However, it has two main components:

- The framework (and the driving culture) for aligning ICTs to business needs.
- The mechanism (criteria and method) for evaluating ICT concepts, ideas and projects.

Within the past few years, numerous academics, theoreticians and strategists have developed and proposed frameworks to guide the process of organizational strategic planning for deployment of technology solutions. However, it is unclear whether organizations actually consider formal processes and/or frameworks for the governance of ICTs.

In late 2005, a research project was initiated in order to:

- a) Develop an understanding of the strategic role/value of ICT solutions and current trends concerning the process of developing governance mechanisms and ICT plans within organizations (in New Zealand).
- b) Assess the effectiveness (e.g. optimizing investment on ICTs) of governance methods and strategic planning for ICTs.
- c) Identify areas where ICT governance and planning processes can be improved (with a focus to add value to business, improve decision-making processes and optimize investment on technology).

The methodology for collecting data for the study (research project) mentioned above included:

- Literature review - to identify widely recommended practices and frameworks for ICT governance and strategy planning.
- Formal interviews of ICT directors, ICT Managers, CIOs, CTOs and strategists within a focus group of organizations – to help establish an understanding of actual ICT governance and planning practices.

Preliminary outcomes of this pilot study (based on the study of the first focus group of organizations) were discussed in [1].

After fine tuning methodology and frameworks for data analysis (based on results of the first focus group), the study of two additional focus groups were completed during 2006. Discussions in this paper are based on updated outcomes – as it relates to the study of the two additional focus groups of organizations - mentioned earlier.

2. An Overview of Governance Methods for ICTs

Successful corporations depend on effective decision-making processes and strategic ICT plans that map their key performance areas to organization's broad business objectives. Within most organizations, ICT governance is a tool for aligning the use of ICT with enhancing operational functions. In general, if an organization aligns the use of technology with enhancing and fine tuning operational functions, then managing ICT strategically implies that the ICT strategic plan complements and strengthens strategic operational plans [16]. These two plans (ICT strategic plan and strategic operational plans) often represent the overall corporate strategic plan.

Managing IT strategically implies (e.g. [16] [3] [4] [5]) an integrated and holistic approach to managing work through the adoption of effective governance approaches. In this paper, we view the key objective of ICT strategic planning as being “to ensure that organization's need for information determines its framework for the management of ICTs” [16] [13].

Most academics, theoreticians and strategists suggest that strategic planning process for ICT can involve three phases – namely, strategic analysis, choice of strategies and strategy implementation: [2], [4] [6] [9] [17] [14] [15] [16]. They

suggest that the outcome of this three-cycle process should preferably be a hierarchy that specifies mission, goals, strategies, policies, decisions followed by an operational and/or action plan. This hierarchy itself is often referred to as a framework/model for strategic planning.

Regardless of the approach that is undertaken in order to develop an ICT strategy plan, different organizational cultures (e.g. cost advantage, innovation, differentiation and growth) and forces that drive business strategies (e.g. centrally planned, monopoly, leading edge and ICT as a limited resource) may influence the ICT planning process [8].

There are various models/frameworks for developing ICT plans – examples include:

- Models that focus on intention/effect of planning – such as *Business Impacting* and *Business Aligning*.
- Models that concentrate on the planning process – such as Top-down, Bottom-up and Eclectic.

Other approaches to planning can include:

- Project-oriented planning – reactive in nature, often does not ensure that the ICT plan meshes well with the overall business plan
- Needs-based ICT planning – often fails to give consideration to the total information requirements of the organization across operating units
- Planning for ICT in parallel with the business plan (similar but not quite the same as business aligning)

3. The reality of ICT Governance within organizations

This section outlines a summary of the results of the pilot study of the focus group that was mentioned earlier in “Introduction.”

Organizations that participated in this focus group represented various industries, which included Wholesale Distribution, Information Technology Solution Provider, Regional Economic Development, Electronics, Education, Print Industry, HealthCare, Entertainment, Local Government, Energy Industry, and Scientific Research. Most organizations (except for 2) had less than 1000 employees. They classify as Small Medium Enterprises (SMEs). Most companies within the focus group felt that the size of the organization did not justify investing on sufficient support for detailed strategic ICT plans – except when overseas trading was involved. The participants of this focus group included both profit and non-profit organizations.

The average number of ICT employees was estimated to be one per fifty total employees of the organization. Most organizations felt that due to the high cost of ICT employment, strategic planning for ICTs should result in maximizing value from ICT employees. This is consistent with theory as discussed in the previous section.

Country population, customer base and the geographical spread of potential customers are important factors in determining any organization’s ICT strategies. Most participating organizations had a customer base of fewer than 50,000 – with the exception of one that has a customer base of approximately 3,000,000. The results indicated that most New Zealand companies had to be concerned with a relatively small customer base that is often spread over a large geographical area.

In most organizations, the ICT group (department) was led by an IT Manager/Director (68%), a Chief Information Officer (8%) or an IT general manager (8%). Twenty percent of organizations did not use conventional structures and/or titles for the way in which ICT operations were overseen (e.g., ICT is overseen by the company general manager, a business unit manager or by a project manager on a project-by-project basis). Please note that there is a two percent overlap concerning the first and the third group.

Most ICT groups within our sample (63%) reported to the company general manager or the chief executive officer. That is to say, the ICT group was being recognized as a business entity (on its own right) – which can affect on organization’s ability to compete within the market place. This reflects the importance of the role of ICT within these organizations.

Nineteen percent of organizations had their ICT group to report to the Chief Financial Officer (CFO). This was mostly because mission critical applications within the company were mostly financial applications. What's more, the ICT department was originally established to support financial applications. The rest of organizations had a variety of arrangements for reporting structure of the ICT group within the company.

The strategic role of ICT solutions within organizations varied significantly – a summary is shown in Fig 1. Support for business applications appears to have the highest score (91%).

Overall, it appears that most organizations view the role of ICT within a technical context – as only six percent viewed ICT departments as being required to provide advice to support planning for the use of technology within the organization. More specifically, even though within sixty-three percent of the organizations the position of ICT (within organization) is strategic, its role is largely limited to technical and operational support.

Critical (strategic) ICT solutions within organizations varied significantly. Thirty six percent of organisations indicated that the most critical ICT solutions that they implemented were to improve communication. Thirty two percent mentioned a variety of applications that excluded financial systems and twenty-four percent chose financial systems as being strategic (Fig 2).

Overall, seventy-six percent of the participating organizations viewed ICT governance as being critical to the future of ICT within the organization. However, only sixty percent practised some form of governance (for deciding the portfolio of ICT projects). Ten percent of participants saw no value in ICT governance and fourteen percent were undecided. Almost eighty percent of the companies in the focus group did not follow a formal framework (refer to the previous section for classification of frameworks) for ICT planning. However, almost every organization agreed that planning for ICTs must be aligned with business needs.

The timeframe for a typical ICT strategic plan was between one to three (or more) years. Twenty six percent of organizations considered a planning horizon that exceeded three years. Thirty seven percent looked at a 1-3 year planning period. The rest planned for 6 months to one year. Over the past few years, the planning horizon for ICTs has been sufficiently narrowed to take into consideration the ever-increasing pace of ICT development.

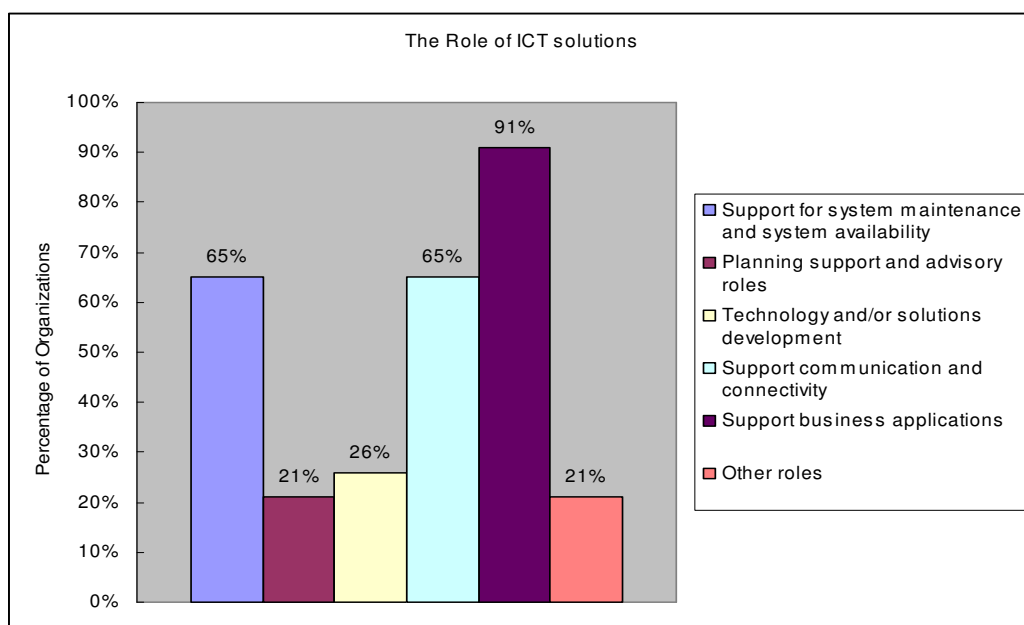


Fig. 1 The Role of ICT Solutions within Organizations

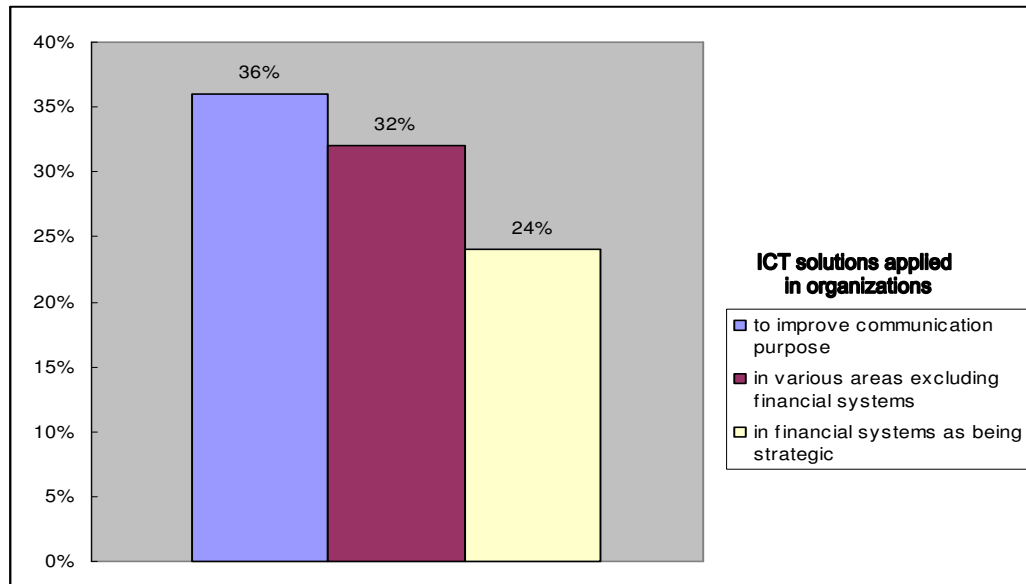


Fig. 2 Key and Strategic ICT Solutions

Organizations were asked to rate the value of and the support for strategic planning for ICTs. Fig 3 shows the results. Overall, most organizations value strategic planning. What's more, seventy-six percent believed that there is sufficient support for planning.

In most organizations (53%), the planning process was initiated by the ICT group or ICT project teams. Within thirty percent of the participating companies, business unit managers or general managers initiated the planning process.

Some of the parameters that influenced the process of planning (or lack of planning) are outlined in Fig 4. As mentioned earlier in this section, cost is the most influential parameter.

Organizations identified different critical phases concerning the strategic planning process. Forty four percent of participants identified assessing the current situation and access to accurate information for the analysis of current situation as being the most critical phase of the strategic planning cycle. Design architecture was chosen as being a critical stage by twenty-eight percent of organizations. Twelve percent of participants identified implementation as a critical phase. Eight percent had no opinion and another eight percent identified a combination of other critical phases of planning.

Organizations were asked to comment on the ways in which they assess the effectiveness of their ICT strategy plans. Surprisingly, forty one percent did not assess effectiveness of their plans/projects at all. Twenty-five percent considered users' view (requirements) as a method of reviewing the success of strategic plans. Another twenty five percent used financial measures to assess the value of ICT planning. The rest (8%) used a combination of other approaches.

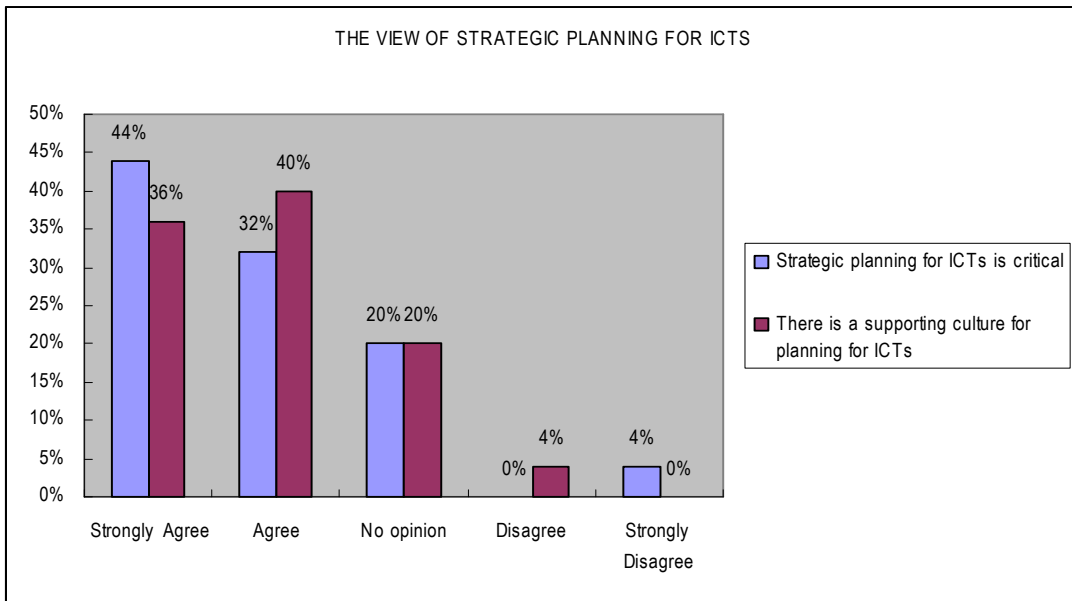


Fig. 3 Support for Strategic Planning

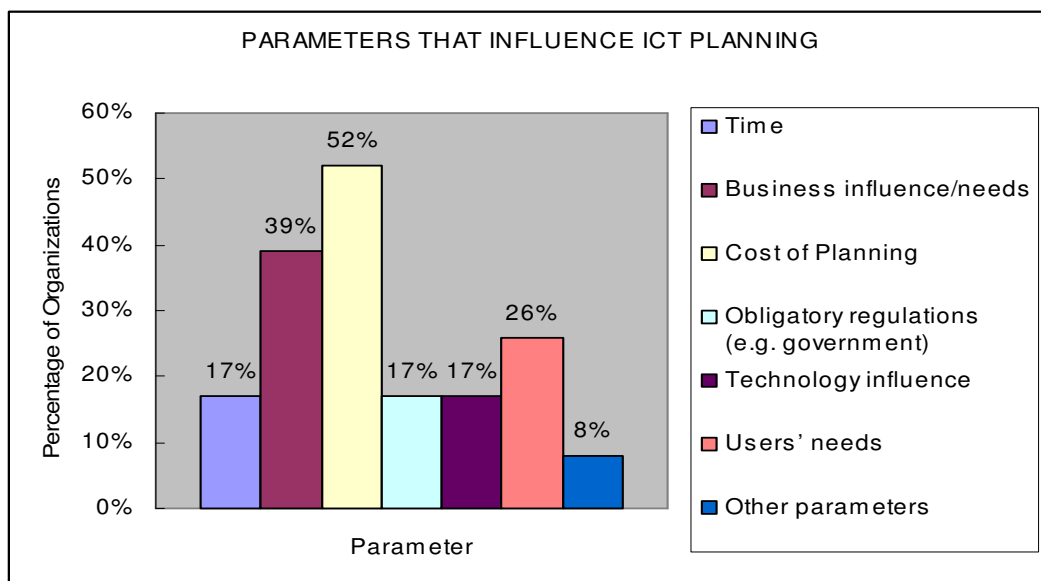


Fig. 4 Parameters that Influence Strategic Planning

4. Summary and Conclusions

The process of ICT governance that drove the strategic planning (as carried out within the organizations that participated in this focus group) appeared to be somewhat different from theory (as discussed by numerous theoreticians and ICT strategists' worldwide and summarized in one of the earlier sections). This is partially because New Zealand companies are mostly SMEs (smaller organizations compared with companies in Europe and/or North America).

In brief, the organizations that participated in this focus group represented various industries including wholesale distribution, information technology solution provider, regional economic development, electronics, education, printing industry, healthcare, entertainment, local government, energy industry, and scientific research.

Overall, organizations viewed ICT solutions as being essential to adding value to business and ensuring competitiveness. ICT was viewed as a catalyst for innovations that would allow organizations to streamline processes and provide better service to potential markets.

Concerning the process of governance and planning, few participants followed a formal strategy planning and/or governance framework. Many organizations performed ICT planning at operational level (project-based). Strategic planning for ICT was viewed as a high cost exercise - where ICT directors, CIOs and strategists were expected to justify its expense to senior management teams (or board of directors).

Most planning approaches appeared to have been based on a "top-down" strategy. The ICT governance was valued but appeared to be informal. It seemed like many organizations did not measure the effectiveness of their planning processes.

The results of this study are not yet final. However, it appears that almost half of the organizations (in this focus group) may benefit from not only fine-tuning their ICT governance and planning processes but also putting in place mechanisms for evaluating and assessing the effectiveness of their approaches to planning.

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