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Current Trends in Strategic Management of Information and Communication Technologies

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As capital investment on Information and Communication Technology (ICT) within corporations continues to grow, ICT managers and strategists are increasingly expected to optimize the investment on ICT solutions. That is to say, there is an expectation that organizations not only maximize the benefits of adopting ICTs but also avoid the many pitfalls and risks (economical, social and cultural) that are associated with rapid technological change. This paper is concerned with current trends in strategic management of Information and Communication Technology – with a focus on maximizing ICT benefits. It is based on a recent pilot study of a focus group of a number of organizations representing various industries. The paper looks at recent developments in the application of (and investment on) ICTs - which have resulted in an ever-increasing scrutiny on the ways in which ICT solutions are planned for and introduced. After a brief review of planning approaches, it outlines some of the results the pilot study that was mentioned earlier. Preliminary results indicate that in general, most organizations do not follow formal frameworks for planning for and governance of ICT initiatives.

Field of Research: Strategic Management, Strategic Planning, Management of Information Technology

1. Introduction

Today, access to information and communication technologies (ICTs) plays an essential role in both economic and social development. An ongoing stream of ICT solutions and e-technologies is contributing towards a significant transformation of corporate business processes 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 (Kodama, 2002).

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Within the last decade, investment on ICTs has become the largest component of capital expenditure (within most organizations). In the United States alone, the capital expenditure on ICT equipment and infrastructure in 2005 estimated to have reached $1.8 trillion (Lauden & Lauden, 2006; Lauden & Lauden, 2005). 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 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 must also avoid the many pitfalls and risks (economical, social and cultural) that are associated with rapid technological change. 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. Within the past few years, numerous academics, theoreticians and strategists have developed and proposed frameworks to guide the process of organizational strategic planning for technology. However, it is unclear whether organizations actually consider formal processes and/or frameworks when they plan for the use of ICTs.

In late 2006, a research project was initiated in order to:

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

This paper is based on the outcome of the pilot study (of a focus group of organizations) as outlined in (a) above. The methodology for collecting data included:

- Literature review - to identify widely recommended practices and frameworks for ICT strategy planning (and aligning ICT plans with business strategies).
- 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 planning practices.

2. Literature Review: Planning for ICTs as Strategic Tools

As discussed earlier, increased investment in ICTs has resulted in challenges faced by ICT directors and strategists - as they are required to not only justify investments on ICTs but also maximize the benefits that are offered through the application of technology. The success in maximizing return on ICT investment is often achieved through strategic management of ICT solutions and preparing strategic ICT plans.

Successful corporations depend on strategic ICT plans that map their key performance areas to organization's broad business objectives. 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 (SANGONet, 2001). Within most organizations, these two plans represent the overall corporate strategic plan.

Managing IT strategically implies (e.g. SANGONet, 2001; Asgarkhani, 2003a; Asgarkhani, 2003b; Asgarkhani 2003c) an integrated and holistic approach to managing work. 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" (SANGONet, 2001; Levy, Powel & Yetton, 2001).

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 (e.g. Asgarkhani, 2003b; Asgarkhani 2005; Board, 2001; Newman & Zawacki, 2002; Parkinson & Baker, 2005; Benson, Bugnitz & Walton, 2004). 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 to develop an ICT strategy plan, different organizational culture (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 (Benson & Standing, 2002; Benson et al, 2004; Boar, 2001).

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. Methodology and Research Design

This aim of this pilot study (outcomes discussed in section 4) is to establish an understanding in common trends and practices concerning the strategic planning and management of ICTs within organizations. The study involved investigating common strategies and technology management practices within a focus group of over twenty companies within the Canterbury region of New Zealand.

The study was based on a formal interview approach. Interview questions were designed base on literature review (of widely recommended practices and frameworks for ICT strategy planning - and aligning ICT plans with business strategies – as discussed in section 2) and informal interviews of five ICT managers and/or strategists.

4. Findings: The Reality of Strategic Management of ICTs

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

The participants of this focus group included both profit and non-profit organizations.

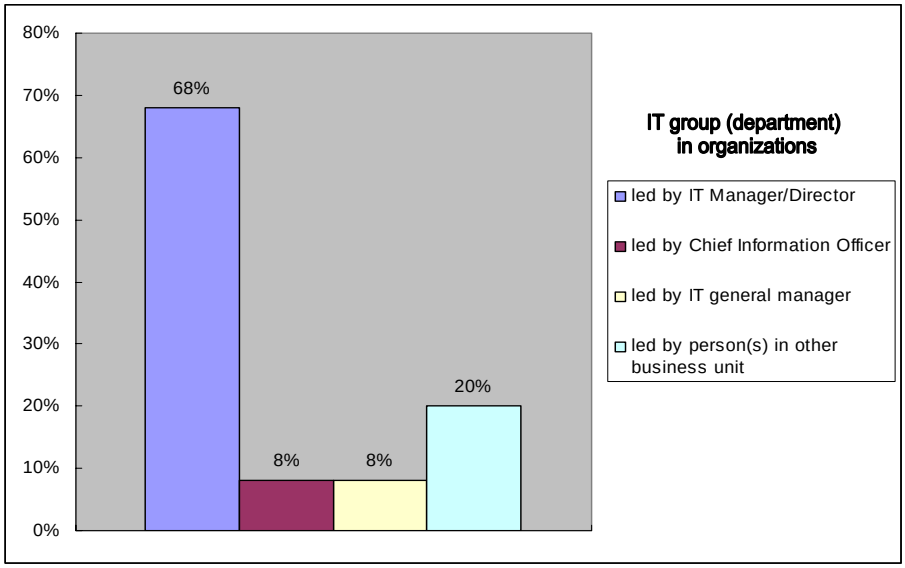
In most organizations, the ICT group (department) was led by an IT Manager/Director (68%), a Chief Information Officer (8%) or an IT general manager (8%). Twenty percent of organizations did not use conventional structures and/or titles for the way in which ICT operations were overseen (e.g., IT is overseen by the company general manger, 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 (Figure 1).

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.

FIGURE 1

Who Leeds the ICT Group?



The strategic role of ICT solutions within organizations varied significantly – a summary is shown in Figure 2. 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

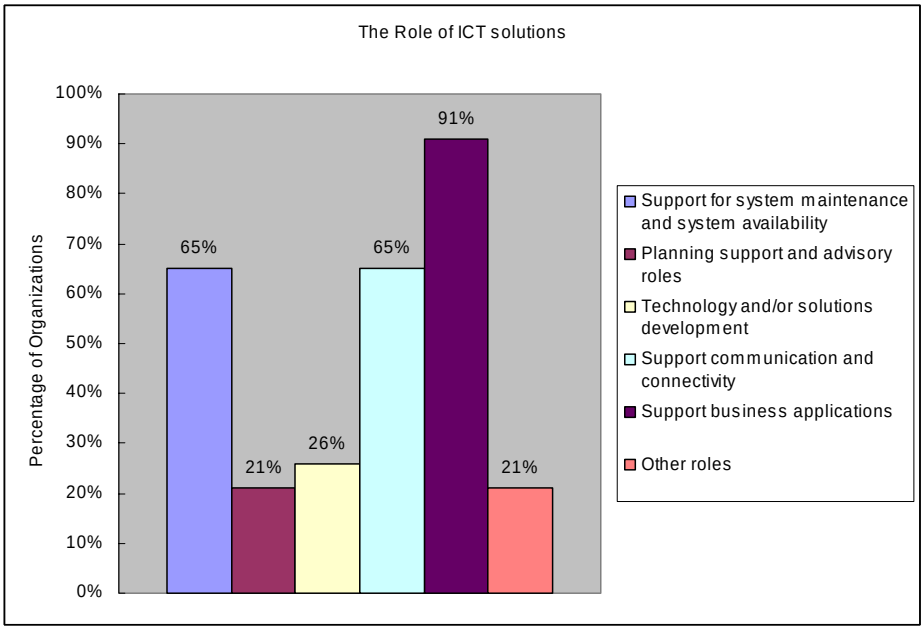
organization. More specifically, even though within sixty-three percent of the organizations the position of ICT (within organization) is strategic, its role is largely is limited to technical and operational support.

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 (Figure 3).

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.

Figure 2

The Role of ICT Solutions



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.

Organizations were asked to rate the value of and the support for strategic planning for ICTs. Figure 4 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 Figure 5. As mentioned earlier in this section, cost is the most influential parameter.

FIGURE 3

Key ICT Solutions

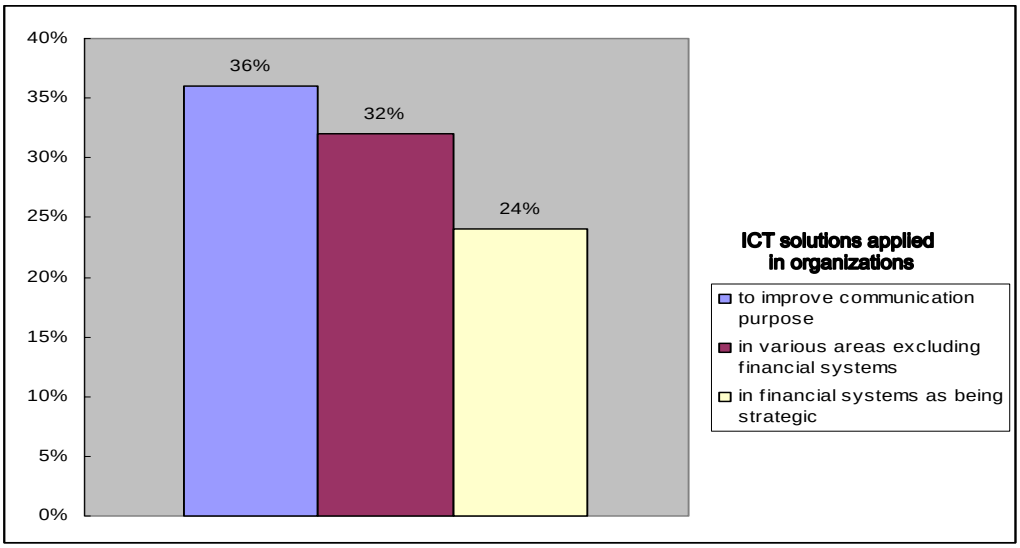


FIGURE 4

Support for Strategic Planning

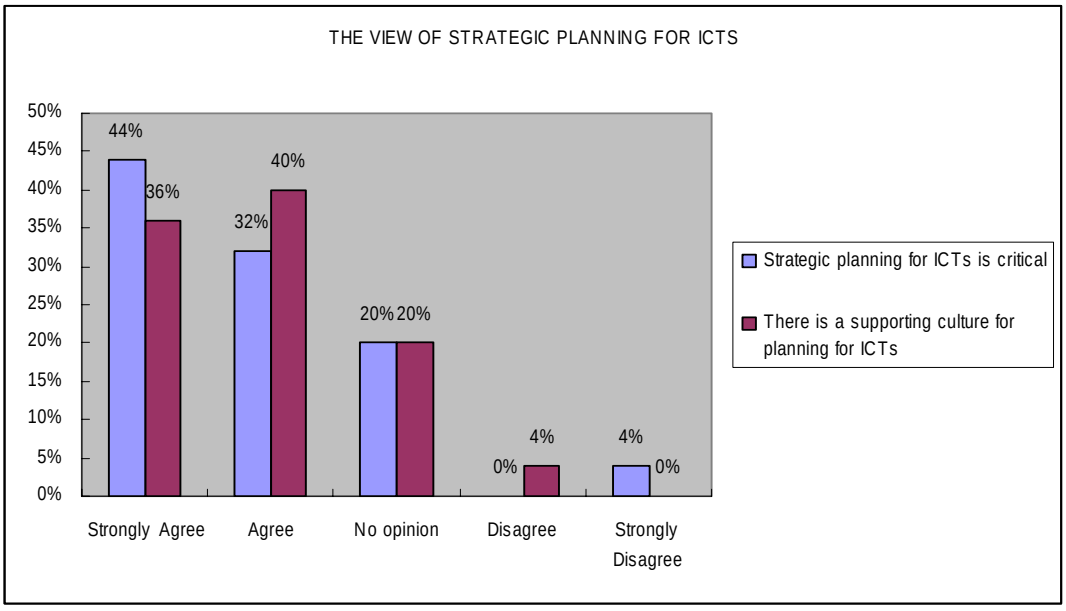
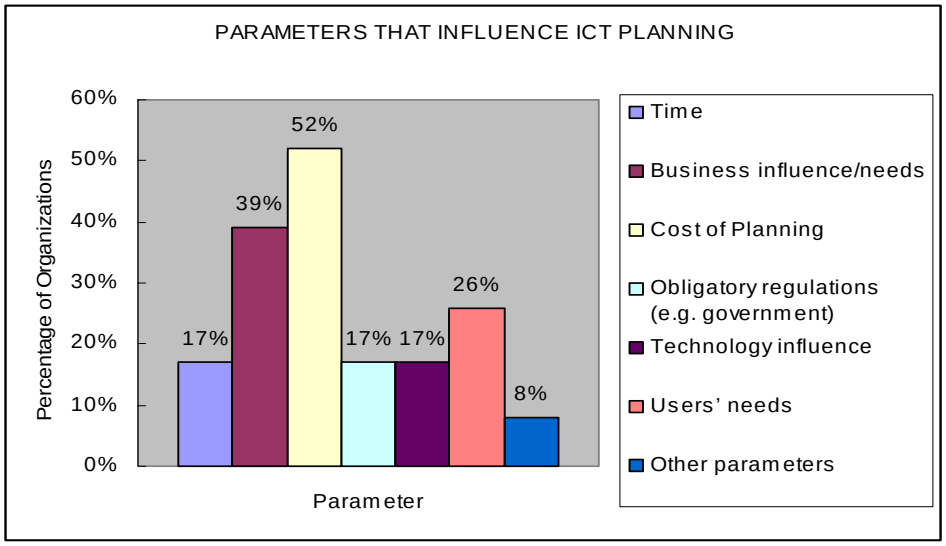


FIGURE 5

Parameters that Influence Strategic Planning



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.

5. Conclusion

The process of ICT 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 previous 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.

With regards to the process of planning, few participants followed a formal strategy-planning 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 planning processes but also putting in place mechanisms for evaluating and assessing the effectiveness of their approaches to planning.

References

Asgarkhani, M. 2003a, 'Strategic Framework for Electronic Government', *Proceedings of the 22nd National IT Conference*, Sri Lanka, pp57-65.

Asgarkhani, M. 2003b, 'Strategic Management of Information systems and Technology in an e-World', *Proceedings of the 21st IT Conference*, Sri Lanka, pp103-111.

Asgarkhani, M. 2003c, 'Electronic Service Delivery in Local Governments – A Strategic Tool for Service Quality Improvement in the Information Age', *Proceedings of the International Symposium on Service Charters and Customer Satisfaction in Public Services*, City University of Hong Kong (Proceedings on CD).

Asgarkhani, M. 2005, 'Digital Government and its Effectiveness in Public Management reform: A Local Government Perspective', *Journal of Public management review*, 7 (3), pp 465-488.

Boar, B. 2001, *The* Art of Strategic Planning for Information Technology, 2nd Edition, John Wiley & Sons, Inc.

Benson, S. and Standing C. 2002, Information Systems: A Business Approach, John Wiley and Sons Australia Ltd.

McKeown, P. 2003, Information technology and Networked Economy, 2nd Edition, Thomson Course Technology.

Lauden, K.C. and Lauden, J.P. 2006, Management Information Systems, 9th Edition, Person Prentice Hall.

Lauden, K.C. and Lauden, J.P. 2005, 'Essentials of Management Information Systems', 6th Edition, Person Prentice Hall.

Kodama, M. 2002, 'Strategic Partnership with Innovative Customers: A Japanese Case Study', *Journal of Information Systems Management*, Spring 2002, pp31-52.

Levy, M., Powel, P. and Yetton, P. 2001, SMEs: Aligning IS and the Strategic Context*, Journal of Information Technology*, Vol16, No.3, pp133-144.

Newman, S. and Zawacki, R. 2002, 'Facilitating Transformation in IT: Lessons Learned along the Journey', *Journal of Information Systems Management*, Spring 2002, pp12-18.

Parkinson, M.J.A. and Baker, N.J. 2005, 'IT and Enterprise Governance', *Journal of Information Systems Control, 3, pp17-21.*

Benson, R.J., Bugnitz, T.L. and Walton, W.B. 2004, From Business Strategy to IT Action, Wiley Publishers.

SANGONet, 2001. Using ICTs Strategically, [online] http://www.sn.apc.org/corporate/strategic/strategic.shtml#using