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Staying Focussed in a Crisis

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Abstract

The number of different crises that might occur in any organisation grows as companies adapt to suit the increasing variation of their environments. Management of process change in crisis situations should be swift, appropriate and directed at supporting continual achievement of longer term goals. The changes made in crisis situations should not be reactive and focused on short term problems that may pass in a day or a week. Rather, changes should continue to direct the energies of the organisation in achieving short term objectives and long term goals. A method by which an organisation is able to 'stay focussed in a crisis' is by linking processes to goals and identifying those processes most critical to achieving organisational goals. The method is the subject of this paper. A research project has identified and tested this methodology which can be used by business to ensure that process change is focussed on the goals of the organisations and not the 'squeaky wheel' of the day.

Keywords: Strategy Map, Change Management, Process Improvement, Business-IT Alignment

1. Introduction

With the emergence of 'post-bureaucratic' forms of organisation, such as: the 'networked organisation' (Drucker 1988), the 'virtual organisation' (Davidow et al. 1992) and the knowledge-creating company (Nonaka et al. 1995), Symon (2000) suggests that organisational structures now have leaner and flatter management structures and that many have outsourced functional activities (Symon 2000). Symon (2000) states that, "these leaner organizations are envisaged as thus being more flexible and responsive to rapid environmental change". She adds that decisions are made more quickly and changes in organisational direction occur in shorter time frames.

New organisational structures are evolving, but what assists in the strategic planning processes in these forms? Grant (2003) describes from the literature four developing forms of strategic planning that are suitable for organisations within what he calls a business environment which is turbulent:

1. Scenario planning which seeks to identify plausible strategy options dependant on a number of variables.
2. Strategic intent and the role of vision which suggests that organisations should plan only on the high level and within the short term.

3. Strategic innovation which suggests that organisations are conservative in their approach to strategy and “fail to distinguish planning from strategising”.
4. Complexity and self-organisation which suggests “limited probes into the future, experimentation, strategic alliances and time based transition processes that link the present with the future” (Grant 2003).

The implementation of strategy requires effective change management. The complexity of change increases if the strategies involve the introduction of new information systems. This occurs because technology affects the tasks, the roles, and the structures in place within organisations. In particular, there are changes in power and knowledge structures, and for these changes to be successful, attention must be paid to changing the organisational culture within the change management programs. Indeed, as new information systems have generally focused on flattening hierarchies, distributing decision making to the lowest possible level of knowledge worker, these power and knowledge structures are severely challenged. Thus, the introduction of innovations through information technology requires leadership that focuses on managing cultural change. There is an inertial component to galvanizing the resources to master such innovation, and hence a lag between the concept of the innovation, and the organisational leadership to effectively implement the change.

Moreton and Chester (1997) use Walton's (1989) model to enumerate the key steps in adopting and infusing innovative technology (Table 1). This model implies the need to have means of coupling vision with business and process (Moreton et al. 1997).

	Phase 1	Phase 2	Phase 3
Component	Generating the Context	Transition	Exploitation
Alignment	Vision aligned with business, organisation and technology	Organisational Systems Aligned with Vision	Operational Use aligned with Vision
Commitment	High Organisational Commitment	Design and Development processes promotes and exploits ownership	Users feel strong ownership
Competence	General Competence and IT literacy	Organisation and systems designed to use and promote masters	Users master and extend the system and its use

Table 1 Steps in the Adoption of Information Systems
(Walton 1989 in Moreton and Chester 1997:47)

In terms of alignment, one can pose the following questions:

- How does one clearly identify the vision with the business organisation and the technology?
- How does one ensure that the organisational systems are aligned with the vision?
- How does one assess that the operational use of the system is aligned with the vision?

Some means of coupling vision, strategy, objectives and processes would be of use here, as information systems support the processes. This business map, when linked to the IS

portfolio in place (as-is) then visually summarises the alignment of existing IS to the business. This provides the means for an effective gap analysis – identifying those processes, objectives and strategies NOT effectively supported by the current Information Systems portfolio.

This visualisation gives business managers an understanding of their application suite and should provide commitment to fund appropriate systems development. The visualisation of the needs of a system and its direct link with the business strategies may lead to high organisational commitment. To transit to systems exploitation, a design and development process which promotes ownership is required. This should lead to owners feeling a sense of ownership over the final products as they have had significant input into the development processes. Thus, this method may provide a means of engaging with the business process owners through the articulation of system requirements, based on the strategies and objectives of the firm. We conclude that a method which is used to support change within these new forms of organisations should be:

- a). capable of supporting the new forms of strategic planning that are used within these organisations and
- b). capable of articulating the alignment of the business, the organisation and the technology.

Furthermore, any methodology should be of use in the three different forms of change management: planned change, emergent change and opportunistic change (Orlikowski et al. 1997). In planned change, one can meticulously plan and involve all parties (stakeholders). In addition, one should be monitoring the progression towards these planned objectives. Emergent change occurs when those elements NOT planned for appear during the change process and need to be dealt with. The critical decision here is what to change, and what will the effects of these changes be in the overall strategy. Finally, a particular type of change may be detected: opportunistic change. This change type occurs when elements encountered during a change process are recognised to lead to immediate benefits and so one must again alter the plan to accommodate these different circumstances.

This paper describes a methodology of guiding strategy formulation, irrespective of organisational structure or strategic planning process. This methodology is sufficiently rich to support the alignment objective as this methodology clearly identifies the linkages between strategy, objective and process. Indeed, we propose that the three stages of alignment: setting the context, transitioning the change and exploiting the changes, are all supported through the proposed methodology.

This methodology was developed during a two year industry-based research project. The objective of the research was to develop a method by which organisations are able to identify the relationships between individual processes and organisational goals, by determining and assessing, the cause and effect pathway of each process (Huxley 2003). The method is called business process targeting or the targeting method.

This paper will describe how the use of cause and effect combined with the ‘mapping’ of the strategic plan, linking objectives to processes and then assessing ‘criticality’ provides considerable support to new forms of organisational structure and the three types of organisational change (planned, emergent and opportunistic). It first describes the research methodology employed in the study, and then discusses how this methodology supports the alignment goals and sustains change management of the implementation of the strategy.

2. The Study

In this section, we briefly describe the methodology used to develop the targeting methodology. We then discuss its contribution to practitioners from a theoretical viewpoint. A key lesson learned from the research was the need to effectively communicate the findings to the participants. This is the major focus of this paper.

Research Goal

Kaplan and Norton (1996:30) state that a “strategy is a set of hypotheses about cause and effect”. This cause and effect linkage is concerned with the ‘drivers’ behind a strategy (Kaplan et al. 1996). With a cause and effect map linked to the processes within an organisation and to those processes influenced by an organisation it is possible to identify: the process scope of any intended change, and the effected processes due to that intended change. The targeting method also makes the alignment of process objectives with goals by explicitly linking processes to organisational goals possible

Research Method

A targeting methodology was developed with this in mind. This methodology was developed in a research project which was funded by the Australian Research Council’s Linkage projects and undertaken with support by REALTECH. The participants included the top three information systems outsourcing companies in Australia and another in the top ten of this industry (Benson 2002). The study commenced by identifying the critical functional areas within the ASP environment. This involved both a focus group session and a Delphi study.

The Delphi study was followed by four action learning cycles using case studies (action, observe, reflect and revise). Action learning is a four phase method used to improve the outcomes of a learning process. These four phases are essentially: act, observe, reflect and revise.

Figure 1 summarises the action learning cycle. (PS= pilot study, C1=case study 1, etc)

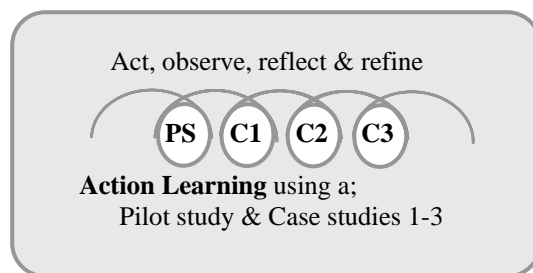


Figure 1: Model of the action learning cycles using case study

The cycles of action learning are to ensure that:

1. There are sufficient periods of observation to capture all relevant data (Bunning 1993; McGill et al. 2001)
2. That reflection is undertaken after more than one experience (Bunning 1993; McGill et al. 2001)
3. That this experience involves more than one context to provide generalisability (external validity) (Benbasat et al. 1987)
4. That each revision builds on increasing experience and is an improvement of the forthcoming action (implementation) (Bunning 1993; McGill et al. 2001)

This research project used four cycles of action learning including a pilot study and three single case studies as the observation phase for the action learning. These case studies were situated in large Application Service Provision organisations operating in Australia. Participants included organisations in the top 10 ASP organisations (Huxley 2003).

Research Results

The result from this research project was a tested methodology for identifying and selecting processes for improvement. The research team identified from the literature initially, and then tested using action learning, the three key factors which when assessed and then combined, provided a rank order of processes for which the result was defined as criticality. These factors are:

1. Impact- which is defined as the relative contribution of a process on the objectives, strategies and goals of the organisation;
2. Probability of failure- which is defined as the chance that a process will operate within the failure zone
3. Dependency- which is defined as the effect on the organisation of the failure of a process.

These three factors (impact, probability of failure and dependency), aggregate to yield a value of process criticality where criticality is defined as “*those processes which have the ‘greatest’ effect on the attainment of Corporate Strategic Goals*” (Stewart 2002).

From these three key factors, one identifies the most promising candidates. These top ‘few’ of the ranked critical processes are then assessed for the value they might provide to the organisation if they are improved. Of those processes assessed for cost/benefit, only those having a positive value for the organisation are assessed for the probability of successful improvement. Process improvement projects with greatest positive value for the organisation, the greatest chance of successful improvement and the largest criticality rating are the selected processes for improvement.

Figure 2 depicts the relationship of these variables to the construct of Process Criticality.

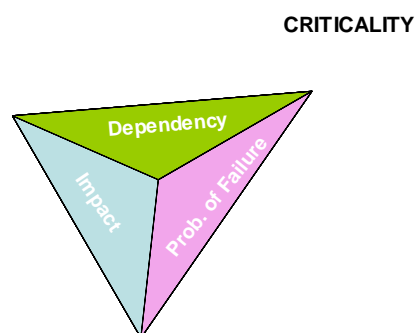


Figure 2: The three factors used to assess criticality

To identify the rank order of critical processes that have the ‘greatest’ effect on the goals of the organisation it is necessary to:

- 1). Identify the processes on a high level within the organisation using a reference model or other method

- 2). Assess the effect of failure of each process on the organisation
- 3). Assess the probability of failure of each of these processes
- 4). Transfer the organisations strategic plan to a visual map
 - 4a). Ensuring that suitable objectives are identified and place them appropriately
 - 4b). Identifying the processes from the previous list which impact upon the objectives within the visual map
 - 4c). Assessing the value of the impact from processes to goals and then calculate each processes impact on goals
- 5). Calculate the criticality of each of these processes by assessing the product of 2,3 and 4c.

This will give the organisation a rank order of processes from least critical to most critical. From this list and the visual map it is possible to identify those processes that will be affected by change and the people involved in that change as it pertains to the goals of the organisation.

In the diagram below we show how the factors, impact, dependency and probability of failure are used to identify a rank order of processes with those having the greatest value being most critical for achieving organisational goals.

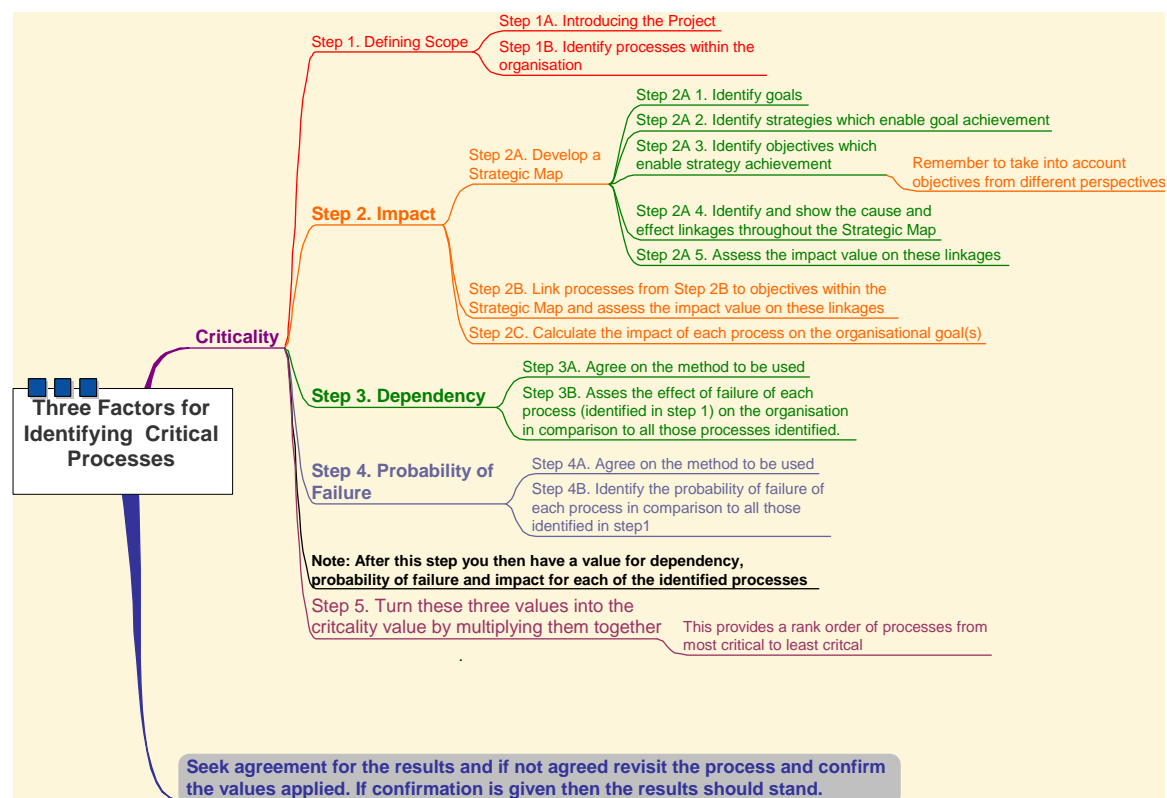


Figure 3: Explanation of the three factors used to assess the criticality of a process

In this figure, the example of the strategic map is read from left to right and top to bottom. Dependant on the makeup of the strategic plan the map is built to reflect the cause and effect relationships within the plan. The explanation is indicative of the use of colour and positioning which can be achieved using the mind-mapper software.

The Targeting Methodology

The output of the research was the Process Improvement Targeting Methodology. This is shown below:

1. Preplanning
 - 1.1. Assessing participants
 - 1.2. Preparation of any documents
2. Defining Scope
 - 2.1. Identify the processes
 - 2.2. Introduction of the project as a whole to the project team
3. Developing a Strategic Map
 - 3.1. Identify the goals and strategies and objectives of the entity
 - 3.2. Identify the cause & effect linkages within the Strategic Map
 - 3.3. Link processes identified earlier (2.1) to internal process objectives
4. Assessing the Impact of Processes on Goals
 - 4.1. Assess the impact of each process on goals using heuristics and total
5. Assessing Dependency of the Organisation on the Process
 - 5.1. Agree on the method to be used for assessing dependency
 - 5.2. Identify the criteria to be used and rate each process
6. Assessing Probability of Failure of the Process
 - 6.1. Agree on the method to be used for assessing probability of failure
 - 6.2. Identify the criteria to be used and rate each process
7. Calculate the Criticality of each Process
8. Assess the Cost/Benefit of Improving the Process
 - 8.1. Agree on the method to be used for assessing cost/benefit
 - 8.2. Identify the criteria to be used and rate each process
9. Assess the Probability of Successful Improvement of the Processes with positive cost/benefit
 - 9.1. Agree on the method to be used for assessing probability of success
 - 9.2. Identify the criteria to be used and rate each process
10. Selection of which Critical Process to Improve First
 - 10.1. Rank order the processes with positive cost/benefit by greatest probability of successful improvement. Those processes with the greatest probability of success and greatest cost/benefit should be improved first

Significance of the targeting methodology

The significance of the research project to the business community is that the methodology provides a practitioners guide to using the method. The methodology improves on the existing approaches to process selection, ensuring that money invested in process improvement is provided the largest possible value. This point alone might save organisations considerable time and money by ensuring that the processes improved offer the greatest benefit through improvement to the organisation. We have also shown that the targeting methodology has further uses, extending the identification of critical processes to enabling organisations to identify critical objectives and critical strategies within their strategic plans. The targeting method also causes organisations to take a process view of them-selves, and understand the effect of change within critical processes.

The ability to identify critical processes reliably will enable process re-engineering and process improvement projects to focus on those processes which have the greatest impact upon the goals of an organisation and thus greatest value to the organisation. This may lead

to competitive advantage in an environment in which knowledge is considered to be a large part of any competitive advantage.

These action learning cycles using case studies have revealed that the methodology (which includes the steps to implement the methodology) meets the needs of organisations to identify and select 'critical' processes for improvement. It provided business and researchers with a logical and explicit method to reduce the 'squeaky wheel' and 'latest fad' approaches to process improvement projects. It provided a mechanism to visualise the relationships of strategy, objectives and processes. This visualisation mechanism is discussed in the next section.

Visualisation of the Findings

While testing the targeting methodology to identify critical processes, our research team developed a new approach to visualising and communicating complex information using a software package (Mind-Mapper) combined with a set of informal formatting rules. The new approach was a solution to communication problems that arose during a series of case studies of which two participant organisations were in the top ten of Australian IT outsourcing organisations. The software produced by Mind Jet called 'Mind Mapper' presents visual concept analysis maps with which we sought to render the maps more effectively. We investigated the work of Tufte (1990,2002) who writes on the visual display of information. His 2002 book "Visual Explanations: Images and Quantities, Evidence and Narrative" explains how a visual explanation has a number of levels of information. The first is the colour of the explanation and how colour draws the eye to groups of information. The second is the layout of the explanation and the placement of objects or information as another way of relating information and the third, the structure of text based information (Tufte 1990; Tufte 2002). The software is able to take into account the three levels of information suggested by Tufte (1990, 2002). Text can be coloured as well as highlighted and positioning of branches or connections are easily achieved. In addition, the amount of text is not constricted by the software. Further text can be added in isolation from the branch structure as a form of 'notes' to aid in improved communication.

These organisations had complex and comprehensive strategic plans that were essentially text based. In order to implement the process targeting methodology it was necessary to synthesise these strategic plans from their present state, which described the vision, mission, goals and very high level objectives, to a document that included the cause and effect thinking behind the plan and then linked it with high level processes. The research team initially used the Balanced Scorecard (BSC) framework to undertake this task. There is no requirement for linking objectives to measures and although the use of perspectives does add value to the development of the strategic plan it is not necessary for the achievement of cause & effect mapping. Additionally the BSC method is not the only method which uses cause and effect linkages.

Figure 4 gives an example of how strategy, objectives and processes can be visually displayed.

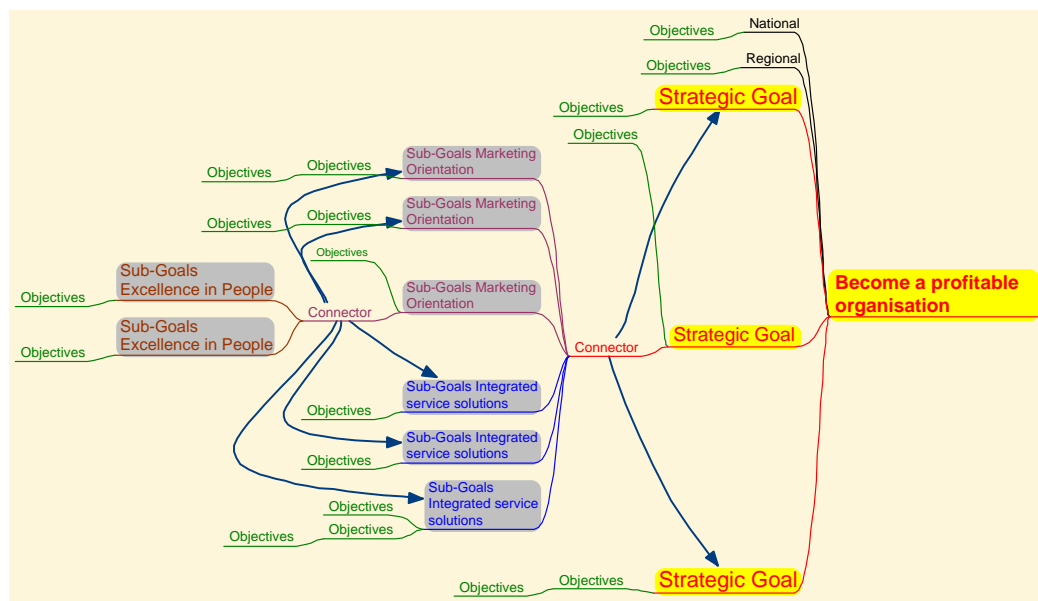


Figure 4: Visualising the connections between Strategy, Objectives and Processes

Mabin, Menzies, King and Joyce (2001) cite Goldratts (1990) work on the Theory of Constraints which uses cause and effect to provide a logical approach to problem solving of which a strategic cause and effect map is such a problem (Mabin et al. 2001a). Cause and effect is also used in the McKinsey's 7-S Framework (Peters et al. 1982), the John Thorp DMR Consulting Approach (Thorp 1998), the French 'Performance Scorecard' (Mendoza et al. 2001), and the 'Australian Business Excellence Framework' (Australian Quality Council 2001). These strategic planning and assessment tools might be suitable tools to use, when mapping strategic cause and effect and confirm the business domain acceptance of using cause and effect as part of strategic planning.

3. How the Method Applies to Alignment and Change

Whether change is planned, emergent and opportunistic as Orlikowski and Hoffman (1997) define, or as Drucker (1999) describes as organised or exploitive, it is possible to use the targeting method to assist in the change process.

In planned or organised change the targeting method is able to identify those processes which have the 'greatest' effect on the organisations goals for the intended change. Once the original strategic plan is in place it is then possible to alter the visual map with the intended change to see the cause & effect relationships on the strategic plan and from this point to identify the processes that will be affected by the intended changes. When these processes have been identified it is then possible to identify the people who will be impacted directly by the change. Understanding and communicating this knowledge is a very effective tool which supports the change process.

Alignment in the first stage of context development is supported through the use of this methodology, because the output of the methodology is a strategic map with clear linkages between the strategies, the objectives and the underlying processes. The impact of systems development to improve the target processes is clearly shown. The effect of this change can be estimated and its effect included in the change management program required for the transition stage. The reach of the change is clearly articulated and all players in that change

identified. Finally, the output sustains the change through to exploitation and can cater for planned, emergent and opportunistic change as all of the linkages between strategy, objective and processes are determined. Planned change programs are derived from the model. Emergent change is those elements requiring adjustment to the change program which are identified during the implementation of the change program. These changes generally occur as the contextual aspects of the change are identified and specified. The cause and effect linkages identified during the application of the targeting methodology provide a deeper understanding of the interaction of strategy, objective and process from which the tuning of the change management program can occur as modifications are revealed during the implementation. Finally, opportunistic change can be accommodated here as new opportunities to achieve greater business value are revealed during the implementation process. The new opportunities need to be expressed in terms of strategies and objectives. These new elements can be more readily mapped into the existing cause and effect model and their impacts on the total set identified and refined.

One portion of the discussion so far of interest to researchers is the issue of improving the communication in the change management process to enhance business-IT alignment. Luftman, Papp and Brier (1999) provide a list of enablers and inhibitors to the improvement of business/IT alignment. Of those which are labelled as enablers possibly half might be supported by improving the communication between IT and business.

Enabler Categories	Inhibitor Categories
Senior executive support	IT/non-IT lack close relationship
IT involved in strategy development	IT does not prioritise well
IT understands business	IT fails to meet its commitments
IT, non-IT have close relationship	IT does not understand business
IT shows strong leadership	Senior executives do not support IT
IT efforts are well prioritised	IT management lacks leadership
IT meets commitments	IT fails to meet strategic goals
IT plans linked to business plans	Budget and staffing problems
IT achieves its strategic goals	Antiquated IT infrastructure
IT resources shared	Goals/vision are vague
Goals/vision are defined	IT does not communicate well
IT applied for competitive advantage	Resistance from senior executives
Good IT/business communication	IT, non-It plans are not linked
Partnerships/alliances	Other
Other	

Table 2. Enablers and Inhibitors (Luftman et al. 1999)

Two major issues arising from this need for improved communication is that business needs to understand the impact of IT on business and IT needs to understand how to provide the required impact of new and existing systems for business goals.

4. Conclusion

This brief paper has suggested that the use of the Targeting Process Methodology is able to support the change process regardless of whether it is planned, emergent or opportunistic change. The methodology enables an organisation to identify those processes and people who are most important to achieve the goals set when instigating change. The method also

provides a visual communication process which is very effective in communicating complex strategic plans in a way which involves not only the management team, instead including the entire organisation if necessary. As a result, it aids in the business-IT/IS alignment processes by clearly articulating the connection between processes to the strategy and objectives. As Information Systems are generally built to support the underlying processes, this visualisation allows the business manager to determine the most important (critical) processes, which should be the target for effective information system support.

This targeting methodology is being used in a subsequent research project to visualise the degree of Business-IT alignment and move it in the direction of supporting greater alignment for critical processes.

References

- Australian Quality Council *Australian Business Excellence Framework*, (2001 ed.) Australian Quality Council, Sydney, 2001, p. 37.
- Benbasat, I., Goldstein, D.K., and Mead, M. "The Case Research Strategy in Studies of Information Systems," *MIS Quarterly* (11:3), September 1987 1987, p 18.
- Benson, K. "Australia IS Outsourcing Services - IS Outsourcing Competitive analysis," IDC, p. 63.
- Bunning, C. "Placing Action Learning and Action Research in Context," in: *Action Learning at Work*, A. Mumford (ed.), Gower, Hampshire, 1993, pp. 25-29.
- Davidow, W., and Malone, T. *The virtual Corporation* Harper Business Press, New York, 1992.
- Drucker, P. "The Coming of the New Organization," *Harvard Business Review*, Jan-Feb 1988, pp 45-53.
- Drucker, P.F. *Management Challenges in the 21st Century* Harper Business, New York, 1999, p. 207.
- Grant, R.M. "Strategic Planning in a Turbulent Environment: Evidence from the Oil Majors," *Strategic Management Journal* (24), December 2002 2003, pp 491-517.
- Huxley, C. "An Improved Method of Identifying Critical Processes," in: Faculty of IT, Queensland University of Technology, Brisbane, 2003, p. 354.
- Kaplan, R.S., and Norton, D.P. *The Balanced Scorecard* Harvard Business School Publishing, Boston Massachusetts, 1996, p. 322.
- Luftman, J.N., Papp, R., and Brier, T. "Enablers and Inhibitors of Business-IT Alignment," *Communications of the AIS* (1:11), March 1999 1999.
- Mabin, V.J., Menzies, M., King, G., and Joyce, K. "Public Sector Priority Setting Using Decision Support Tools," *Australian Journal Public Administration* (60:2), June 2001 2001a, pp 44-59.
- McGill, I., and Beaty, L. *Action Learning: A guide for professional, management & educational development*, (2nd ed.) Kogan Page Limited, London, 2001, p. 262.
- Mendoza, C., and Zrihen, R. "Measuring Up," *Financial Management* 2001, pp pgs 26-30.
- Moreton, R., and Chester, M. *Transforming the Business: The IT Contribution* McGraw-Hill, 1997.

Nonaka, I., and Takeuchi, H. *The Knowledge Creating Company* Oxford University Press, Oxford, 1995.

Orlikowski, W.J., and Hoffman, D.J. "An Improvisational Model for Change Management: The Case of Groupware Technologies," *Sloan Management Review* (38:2), Winter, 1997 1997.

Peters, T.J., and Waterman, R.H.J. *In Search of Excellence: Lessons from America's best-run companies*, (1st ed.) Warner Books, New York, 1982, p. 360.

Stewart, G. "Research discussions on defining a critical process," C. Huxley (ed.), 2002.

Symon, G. "Information and Communication Technologies and the Network Organization: A Critical Analysis," *Journal of Occupational & Organizational Psychology* (73:4), Dec 2000 2000, p 26.

Thorp, J. *The Information Paradox. Realizing the Business Benefits of Information Technology* McGraw-Hill, New York, 1998, p. 273.

Tufte, E.R. *Envisioning Information* Graphics Press, Cheshire, Connecticut, 1990, p. 126.

Tufte, E.R. *Visual Explanations: images and Quantities, Evidence and Narrative*, (2nd ed.) Graphics Press, Cheshire, Connecticut, 2002, p. 156.