

## The systematic evaluation of a strategic management program in an Irish Institute of Technology

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**Abstract** Higher Education Institutes (HEIs) worldwide are investing significant resources in strategic planning and self-evaluation programs to improve institutional performance and to meet external stakeholder demands. Little empirical evidence exists however which demonstrates that these programs are effective in leading to improvements in institutional performance, let alone shed light on the reasons why. This paper reports on the systematic evaluation of the effectiveness of a strategic planning program in an Irish HEI over a 5-year-period in leading to improvements in institutional performance.

**Keywords** Strategic planning · Management · Quality · Institutional performance measures · Higher education research design

### Context

The Institute of Technology Tralee (ITT) is a university-level institution in the southwest of Ireland with courses in Business Studies, Engineering and Science & Computing, with progression paths from Higher Certificate to Masters and Ph.D. ITT has approximately 3,500 students and 300 staff and is one of 13 Institutes of Technology in Ireland (IOT), which can be loosely classified as being part of the ‘non-university’ sector of Higher Education internationally. Although an identical model to the IOTs does not exist elsewhere they exhibit some similarities with the Finnish AMKs, Dutch HBOs, French IUTs, German FHS and the Institutes of Technology in New Zealand.

ITT developed its first 6-year strategic plan in 2000 and was the first Institute in the IOT sector to do so. The term SP1 will be used in the sections that follow to refer to the period when the first strategic plan was developed and the subsequent implementation of the plan. External peer review panels in their reports have

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commended the advanced nature of the strategic planning process in ITT indicating that it is likely to be a good example of strategic planning in higher education and will provide an information rich case study. This meets the criteria of an “*intensity case*”—a case which is not unusual but from which much can be learned (Patton, 2002).

It is important from the outset to clarify the author’s role in SP1. She participated as a member of the group which developed the plan and has been a member of the Institute’s management team throughout the lifetime of SP1 in roles which included quality assurance and strategic planning. She is currently Head of Computing & Mathematics. Every effort was made to eliminate potential bias by ensuring that both data sources and collection methods were triangulated. Where deemed necessary, a reminder of the author’s involvement with the program will be included in the sections that follow to highlight any areas where potential bias may occur and to enable the reader to draw his/her own conclusions.

## Literature Review

Much of the literature in strategic planning relates to the corporate sector with a smaller subset addressing the different driving forces of the public sector. Some authors have looked at the unique characteristics of strategic management in higher education specifically addressing models, advantages, limitations and case studies (Conway, Mackay, & Yorke, 1994; Thys-Clement & Wilkin, 1998; Pidcock, 2001; Rowley, Lujan, & Dolence, 2001; Davies, 2004; Tabatoni, Davies, & Barblan, 2004). The classical strategic planning model which predominates in the literature assumes the external and internal environment can be mastered and deliberate planning, supported by quality information, can predict and determine the future of the organisation (Whittington, 1993). Few studies have tackled the key question of the effectiveness of strategic planning programs in leading to improvements in institutional performance. In the wider public sector Pollitt and Bouckaert note the dearth of empirical studies which tackle the issue of evidence of improvements in effectiveness as a result of reform (Pollitt & Bouckaert, 2004). Birnbaum states that there are ‘*few published examples in the academic sector of attempts to assess the institutional consequences of a management fad through data that provide evidence either of organisational outcomes or of the satisfaction of users*’ (Birnbaum, 2000).

There appears to be growing consensus that strategic planning is an integral part of modern higher education management however (Bayenet, Feola, & Tavernier, 2000, 67; Davies, 2004; Thys-Clement & Wilkin, 1998). Increasingly HEIs find that they have to align themselves to an external environment which is exerting more pressure and are faced with a choice between shaping and managing change internally or having it dictated by external forces (Skilbeck, 2001). The benefits of strategic planning cited in the literature include its ability to capture the complexity of the organisation as a whole and point it in a coherent direction; to provide a platform to articulate the distinctive mission of a HEI; to identify competitive advantage; and to increase awareness of and alignment to the external environment. It requires a leap of faith by senior management however, as it is necessarily based on empowerment of staff, which may be perceived as a loss of control and can lead to lack of commitment. There can also be a significant overhead involved in planning and review at the expense of normal activity and the benefits are not immediately obvious.

In the private sector the strategic planning process starts by identifying the company's mission statement which assumes it has the freedom to define its own purpose. By contrast in most cases the mission of public sector organisations including HEIs are predetermined by legislative frameworks. All long term planning in a HEI will therefore be within well defined pathways and goals, typically some variant of teaching, research and development work. Private sector strategic planning models assume top-down executive control of the direction of the organisation. HEIs are often described as professional bureaucracies or organised anarchies with highly compartmentalised internal structures (Allen, 2003; Bayenet et al., 2000; El-Khawas, 1998; Mintzberg, 1998; Sporn, 2003). Davies notes that these structures exhibit a tendency to avoid confronting problems and exhibit a lack of accountability and defensiveness (Davies, 2004). Bayenet et al. notes that without a modicum of support from academic departments it would be difficult if not impossible to put strategic plans in practice (Bayenet et al., 2000). Birnbaum concurs and suggests the higher education sector has the ability to '*virtually adopt*' a management innovation without having it significantly affect core institutional processes (Birnbaum, 2000). Other differences between the sectors include their attitudes to quantitative performance measurement and the existence of the external peer review mechanism. The literature review on this subject concluded that there were sufficient differences between the public and private sectors to legitimately ask the question whether a long term planning model designed for the private sector is necessary and appropriate in a higher education setting.

### Research methodology

This paper reports on part-findings from a broader study into the effectiveness of strategic planning and self-evaluation programs in higher education in leading to improvements in institutional performance and organisational learning. A distinctive contribution of this study to the literature is a methodological framework for the systematic evaluation of the effectiveness of strategic planning programs in a higher education context. A reality-oriented post-positivist standpoint was adopted which means the results can be viewed in terms of probable casual effects and in which the reader has discretion to draw his/her own conclusions on the basis of the evidence presented. Some elements of the phenomenological philosophy have also been included to capture the complexities of the issues involved. The research design was influenced by its ability to answer the research questions posed in a reliable, valid and generalisable fashion (Patton, 2002). The author acknowledges that it is difficult to generalise from a limited number of cases but generalisability was strengthened by relating results to previous findings in the literature.

In the broader study, a mixed mode approach was used by mixing hypo-deductive reasoning with primarily qualitative methods of inquiry. The main data sources used were Institute documents (proceedings of the Governing Body, the Academic Council and main decision making fora, reports etc) and interviews with key informants who had a major involvement with the strategic planning program. Triangulation of data sources and methods were used wherever possible to minimise potential bias and substantiate results. A core element of the data collection and analysis methodology used was the development of a Log of Issues arising within the Institute during the period 1997–2005, as illustrated in Fig. 1.

Goal	Ref	Area	Issue	Origin	Year	Issue Tracking
Teaching Learning	85	Academic	Open Distance Learning	Senior Management Team	1999/0	<p><b>Senior Mgmt Team Dec 1999</b> "Registrar: 5.1 Distance Education Office: Noted the need for this."</p> <p><b>Senior Mgmt Team Jan 2000</b> "2.11 Distance Education Officer: Agreed the need for a Distance Education Officer; to go in to Programmes and Budgets. If necessary we should second a member of staff to progress this. Action: Development to advertise on consultancy basis."</p> <p><b>Academic Council Apr 2000</b>: "It was noted that the development and delivery of courses through open and distance learning was of Institute-wide concern, as significant resources may be required. The Council noted that the Executive had assigned a budget to explore the issues involved in Course Development through ODL, which will be organised through the Development Office. The Council agreed that the proposal should be developed as an in-house delivery course in the first instance. It was agreed that the Health Boards should be consulted initially prior to detailed development."</p> <p><b>Senior Mgmt Team Sept 2000</b>At the beginning of the meeting a presentation on Open and Distance Learning (ODL) was made by XXXX. The team were complimented on their presenta</p>

**Fig. 1** Tracking the progress of an ‘issue’ during the 1997–2005 timeframe (Extract from Log of Issues)

This paper reports on the findings from analysis of the Log of Issues and other documents. The hypothesis that ‘*the SP1 program was effective in leading to improvements in institutional performance*’ was tested. Rossi et al’s methodology for systematic evaluation of social programs was used to evaluate the program in terms of the underlying need it addressed, the appropriateness of its design and the degree to which it was implemented ‘*as-intended*’ (Rossi, Lipsey, & Freeman, 2003). The impact of SP1 was assessed using a goals-oriented evaluation which is based on the degree to which the program met its stated goals and objectives.

**An assessment of the need for the strategic management program**

The lack of literature supporting the effectiveness of strategic planning in higher education and the ambiguity in relation to the origin of the first strategic planning program meant that an extensive needs assessment was necessary as part of the program evaluation. The most interesting question is why an Institute with no previous experience of strategic planning chose to embark on a full scale strategic planning process at that time. To answer this it was important to understand the extant planning structures and processes in the Institute prior to the development of SP1. Whether SP1 was developed to meet an external requirement and/or internal requirement is considered in this section.

Meeting an external requirement

The first possibility is that SP1 was developed in response to an external requirement. Table 1 summarises the number of issues arising at the Governing Body and Academic Council between 1997 and 2000.

The 28 new issues raised at the Academic Council in 1997/98 stands out in this analysis and warrants further investigation as it is more than three times the number raised in other years. More than 75% of these relate directly to major planning or quality assurance processes. It is possible to associate this increased activity with the requirements of the Institutional Review process, which was initiated that year, and which placed a high degree of importance on quality frameworks and planning. The minutes of the September 1998 Academic Council state that it “*Agreed that a Strategic Plan for the Institute was required for Institute Review*” which suggests that SP1 was initiated to meet an external requirement.

**Table 1** New issues arising in the Institute prior to the development of SP1 (Data source: Log of Issues)

Academic year of origin	Governing body	Academic council
1996/97 (6 months)	0	8
1997/98	6	28
1998/99	10	8
1999/00 (6 months)	8	5

### Meeting an internal requirement

A review of the minutes of the Governing Body, Academic Council and senior management team in the period 1997–2000 prior to the development of the plan (termed PreSP1) show that a high percentage of time was spent on topics which could be classified as operational strategy as per Johnson and Scholes' categorisation of strategic decisions (Johnson & Scholes, 2002). Advisory committees for specific areas (e.g. Computer Resources Committee, Library Committee) met regularly but were limited in their scope. In the PreSP1 period there was no structure or forum where issues of a strategic nature with Institute-wide scope could be discussed in which input from all constituencies could be considered.

The Institute operated under the auspices of the quality assurance framework of the National Council For Educational Awards (NCEA)<sup>1</sup> in Ireland at the time of the development of SP1. The Institutional Review process was a quinquennial review of all Institute operations, including planning, required by the NCEA. In a critique of self-evaluation processes Thorn raises questions in relation to methodological shortcomings and the effectiveness of the Institutional Review process as a planning vehicle for a HEI (Thorn, 2001). In any event the Log of Issues indicates that the Institutional Review process was not implemented as intended as the deadlines for completing it slipped from October 1998 to December 2000 (27 months).

Another possibility in relation to the need for SP1 is that there was insufficient progress being made on issues arising during the PreSP1 period resulting in dissatisfaction with the existing planning structures and processes.  $N = 72$  issues which the Institute was in control of were identified from the Log of Issues during the 1997–2000 timeframe. Of these

- 31% were completed prior to the development of SP1
- 54% were subsequently included as objectives/strategies in SP1
- 15% were not included in SP1

In the PreSP1 period 45% of all issues arising were either “*Institute*” issues requiring co-ordination across all Institute functions or “*Academic*” issues requiring co-ordination of all three academic Schools/nine academic Departments. By way of example “*Institute*” issues included quality structures and systems; internal audit function and the submission for self-awarding status. “*Academic*” issues included modularisation; student mentoring; course handbooks; student workload and open distance learning. The remaining issues could be specifically assigned to the Office of the Registrar (17%), Development Office (22%) and Office of the Secretary/Financial Controller (11%). What is striking in this analysis is that only  $n = 2$  issues

<sup>1</sup> Now the Higher Education and Training Awards Council (HETAC).

(3%) could be specifically assigned to an individual School<sup>2</sup> to progress. This raises questions as to who was actually responsible for ensuring progress on “*Academic*” issues as responsibility was split between three academic Schools.

The fairest comparison is probably between *Institute* and *Academic* issues as both require co-ordination across functions. The analysis shows that substantially more progress was made on *Institute* issues. An investigation of progress on the issues which were subsequently included as objectives/strategies in SP1 demonstrates that 3 years into the implementation of the strategic plan:

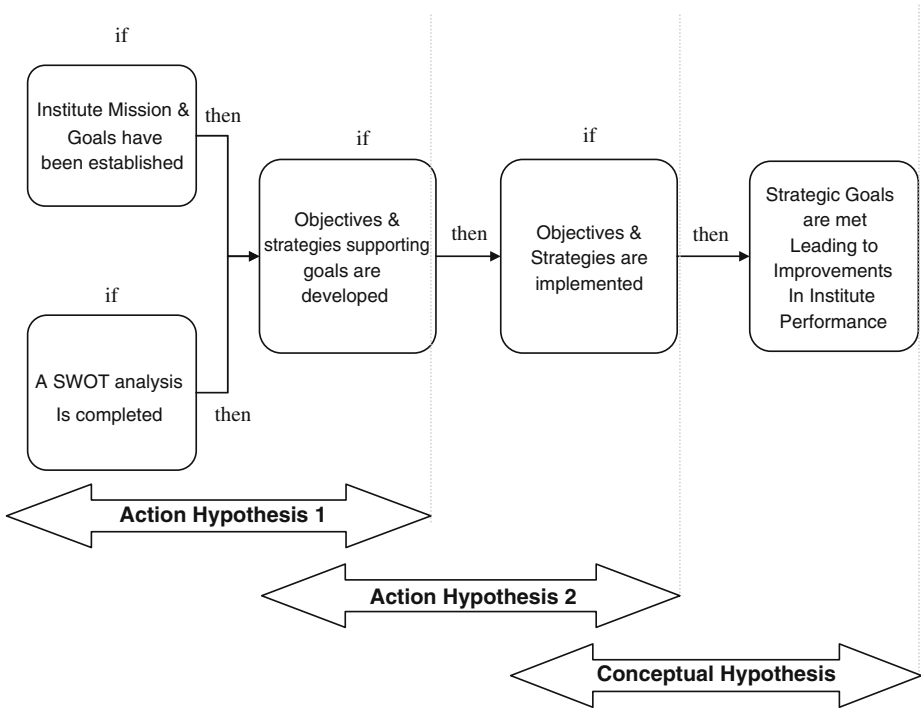
- 5 of 7 *Institute* issues were successfully completed
- 2 of 7 of *Academic* issues were successfully completed in all three Schools

It must be borne in mind at this point that this is a primarily quantitative measure only. It would be difficult to retrospectively quantify and compare the amount of resources which were needed and allocated for each issue or the potential barriers to be addressed. The Log of Issues also demonstrates that within the individual Schools progress was being made on course development, quality assurance and other initiatives. A significant portion of this work was not captured in SP1 however, and it could therefore be argued that SP1 was an incomplete reflection of the development work planned in the Institute. Where a School had individual responsibility for an issue good progress was generally being made. The lack of progress on *Academic* issues may stem from the difficulties in coordinating three Schools. It is possible that there was a reluctance to resource individual School issues as resources allocated to one School might have to be replicated in all three, for example. The reasons why this occurred will be a focus of further research. In any event it points to particular difficulties in strategically aligning three Schools and to the lack of a formal structure or process whereby strategic initiatives across all Schools could have been concurrently implemented. It also suggests that the SP1 did not provide a mechanism to address this.

### Program impact theory

The strategic planning process used in ITT could best be categorised as following a classical or rational model in Whittington’s typology (Whittington, 1993). The purpose of clarifying impact theory is to determine in what way do program activities effect changes. Rossi et al.’s model for articulating program theory is based on the contention that outcomes which are a direct result of the program (proximal outcomes) must be evaluated if longer term outcomes (distal outcomes) are to lead to improvements. Distal outcomes are dependent on the attainment of proximal outcomes—in other words the attainment of the Institute’s goals are dependent on the attainment of the objectives of the strategic plan (Rossi et al., 2003). An action hypothesis links the program actions to proximal outcomes and a conceptual hypothesis links the achievement of proximal outcomes to distal outcomes. The program impact theory is developed from the perspective of capturing the program “*as-intended*” and it is represented in the logic diagram in Fig. 2.

<sup>2</sup> A note on terminology: *The Institute has three Schools (Faculties) each of which has one or more academic departments.*



**Fig. 2** Program Impact Theory – Strategic Planning Program in IT Tralee 2000–2006

**Assessment of program process**

An assessment of program process was undertaken to determine the extent to which the program theory “*as-intended*” was actually implemented as it is difficult to assess the impact of programs which have been partially or incorrectly implemented. The process undertaken for SP1 demonstrates a relatively high degree of cross-functional staff participation.<sup>3</sup> The process assessment concentrates on the main program components as follows: (i) mission & goals (ii) SWOT analysis (iii) developing objectives and strategies and (iv) implementing objectives & strategies. In conjunction with the program theory this formed the basis for comparing the process “*as intended*” with the process “*as implemented*”.

**Mission and goals**

ITT’s Mission Statement was adopted in 1997 as “*To excel in teaching, research and development work, for the benefit of students, industry and the wider community*”. Thirteen strategic goals covering all aspects of the Institute’s operations were developed through a consensus building approach and the goals relate either to the

<sup>3</sup> The document record demonstrates that over 40 staff participated in the workgroups that developed the plan and over 100 in the various implementation project teams.

core activities as stated in the Mission Statement or to central support services, management processes or resources.

### SWOT analysis

A SWOT analysis summarises the key issues from the environment and the strategic capability of the organisation that are most likely to impact on strategy development (Johnson & Scholes, 2002). If the SWOT analysis has been effective there should be evidence in the resultant objectives that (i) internal strengths are being built on and weaknesses are being overcome and (ii) changes in the external environment have been considered through threats and opportunities. There is good evidence that strengths and opportunities have been built upon in the objectives. Most weaknesses and threats have also been translated into objectives albeit less directly. A number of weaknesses identified in the Log of Issues were not included in the SWOT. A review of the document record demonstrates that the majority of external factors in the environment of the Institute at the time of the development of the plan have been included in the SWOT.

### Developing objectives & strategies

In total  $n = 48$  objectives were developed in support of the 13 strategic goals. All of these objectives are supported by one or more strategies. For the purposes of analysis, using a method outlined in Hyndman and Eden (2000), the Marketing goal which had six objectives was condensed to one objective. This was to ensure consistency with similar goals and in order not to skew results, giving a total of  $n = 43$  objectives.

Of the  $n = 72$  issues identified in the PreSP1 document record only  $n = 11$  were not subsequently included in the objectives/strategies of SP1 illustrating that SP1 captured a significant percentage of the pertinent issues being discussed in the PreSP1 phase. There were  $n = 16$  new objectives in SP1 which cannot be traced in the document record which indicates that SP1 generated fresh ideas and new thinking.  $N = 7$  of these 16 new objectives relate to non-academic departments which suggests that SP1 gave these departments an opportunity for input to planning at an Institutional level which may not have been available previously.

Pollitt and Bouckaert's classification of evaluability is used to assess the degree to which the objectives of SP1 are evaluable or measurable (Pollitt & Bouckaert, 2004). The evaluability of each objective was rated on a decreasing scale as follows: Level 1 (Operational), Level 2 (Process), Level 3 (Capacity) and Level 4 (Ideological). This is an important factor in an impact assessment. For example if a plan has only 20% of its objectives at operational or process level it will be difficult to glean any insights into its impact. In SP1 the majority of objectives (87%) are at operational or process level which increases their evaluability and strengthens the impact assessment. The Institute acknowledged a deficiency with some of the objectives when it reviewed its planning structures in 2004 stating that "*some of the objectives had not been broken down into manageable strategies at planning stage*" (ITT, 2004b). In particular a key objective in relation to student number targets does not have meaningful strategies associated with it although it could be argued that the majority of objectives in SP1 would support this objective.



## Implementing objectives & strategies

Johnson and Scholes define managing strategic change as a set of logical processes including resource planning, organisational structure and design and change management (Johnson & Scholes, 2002). Analysis of the Log of Issues demonstrates that in the first 12 months of implementation of SP1 there were a significantly higher number of issues arising in the main decision making fora than in previous years ( $n = 36$  as opposed to an average of  $n = 20$  for the previous 5 years). Almost 90% of these new issues could be directly linked to an objective/strategy in the strategic plan indicating that the Academic Council and senior management team in particular had a high awareness of SP1 and that it influenced decision making in the Institute. The document record indicates that there was a delayed start to the implementation phase where SP1 essentially lost momentum for 18 months. It is possible that this may be associated with the change of Director in the Institute in late 2001.

There were significant difficulties in aligning organisational structures, budgets and resources to strategic priorities as part of the implementation phase. SP1 listed a number of areas which included a strategy to modify/extend the organisational structure in order to meet the objective. A general management team meeting in January 2001 noted that approximately 10 new positions would be required to implement the objectives of SP1 which would be unrealistic viz., the size of the Institute. It is also interesting to note that there is no recorded discussion in relation to downsizing/re-organising existing resources to meet strategic objectives. The Institute recognised this as an issue citing in a self-evaluation report that

*“at this stage (mid-2001) we recognised that certain issues needed to be addressed and these included: the substantial additional workloads arising from strategic projects; additional physical and other resources relating to the objectives; some of the objectives had not been broken down into manageable strategies at planning stage; it was proving difficult to capture and monitor progress”* (ITT, 2004a)

Midway through the plan, a Strategic Programme Office was established on a part time basis, reporting to the Director, to manage the implementation of the strategic plan. Its terms of reference included: mapping the objectives of the plan to projects, monitoring progress, liaising with project managers on a regular basis and providing training where required.<sup>4</sup> The international standard PMBOK (Project Management Body of Knowledge) was used as a basis for a customised project management methodology (PMBOK, 2004). There is evidence in the document record to demonstrate that these processes were implemented as intended (16 project plans were developed, minutes of regular progress reviews exist for all projects, two annual progress reports were issued to all staff by the Director in October 2002 and December 2003). The control systems which were put in place are as follows in Table 2.

Notwithstanding the exceptions outlined above all major components of a strategic planning process were implemented largely *as-intended* for SP1. Therefore a degree of confidence can be placed on the outcomes of the assessment of its impact.

<sup>4</sup> The author was the project manager for the establishment of the Strategic Programme Office.

**Table 2** Control systems implemented for SP1 (ITT 2004)

Process	As intended	Actual implementation
Scope statement	The primary planning document for each project, produced by the project manager and his/her team. This included a Gantt chart, resource plan, communications plan, project team composition and risk register	All project managers produced a scope statement although the process by which it was developed varied. Gantt charts were produced for all projects by the project manager
Progress review	Regular status reports from project managers against the baseline project plan	Overhead of monthly status reporting was too high and system changed to quarterly progress reviews
Project close out	Final review meeting with project manager and lessons learned report completed	Completed for five projects
Annual progress reports	Progress report on the status of all objectives highlighting current status, progress achieved and issues encountered	Produced in October 2002 and December 2003 and issued by the Director to all staff in the Institute

### Impact assessment

The classic “*goals oriented*” impact assessment was used which measures the extent to which the SP1 met its stated goals and objectives. Rossi et al note the strongest quasi-experimental design is to use a time series analysis approach (Rossi et al., 2003). As noted previously there was a delayed start to the implementation phase and a formal progress review mechanism was not in place for the first 18 months making it difficult to retrospectively capture progress in the first year of implementation. It was originally intended that SP1 would be implemented over the period 2000–2006 however this was subsequently changed to 2000–2003 when a new strategic plan was developed “*as a result of the changing environment that the Institute found itself in*” (ITT, 2004). The impact of SP1 is therefore estimated at the end of the following time periods

- Year Two : October 2002 (covering the period September 2000 – October 2002)
- Year Three: December 2003 (covering September 2002–December 2003)

The progress on each objective was reviewed by the Director and the Strategic Programme Office in October 2002 and again in December 2003 and a progress report was issued to all staff on both occasions (ITT, 2002, 2003; SP1, 2002). The definition of completion used in this progress report was “*that the objective/strategy had been completed at least once*” which is a consideration when viewing the outcomes of this impact assessment (i.e. the strategic initiative may/may not have been embedded in the organisation). Using a combination of this progress report (the Institute’s view of progress) and the Log of Issues evidence of the successful completion of objectives and strategies was sought in the document record.

Two objectives which were dependent on Irish government capital funding were eliminated from the analysis that follows as the Institute had no control over these.

**Table 3** Status of SP1 objectives in October 2002 and December 2003 (Data Source: Institute's Annual progress reports on SP1 – (ITT, 2002, 2003; SP1, 2002))

Objectives	Status Octo-ber 2002		Status December 2003	
Complete	13	32%	17	41%
Incomplete/In Progress	21	51%	15	37%
Modified	3	7%	3	7%
Retired	1	2%	3	7%
Ongoing	3	7%	3	7%

Table 3 illustrates the status of the remaining  $n = 41$  objectives in October 2002 and in again in December 2003, summarised as follows:

- 41% of the objectives were completed ( $n = 17$ )
- 37% were incomplete/in progress ( $n = 15$ )
- 7% had been modified ( $n = 3$ ) and one objective had been retired which indicates the Institute was prepared to change direction as circumstances or resources dictated.
- 7% related to ongoing work ( $n = 3$ )

The author's first work to estimate the impact of the strategic planning program did not differentiate between 'ongoing' objectives and other objectives (Lillis, 2005). A key issue arose however in later work which investigated the impact of using strategic planning in four academic departments within the School of Science & Computing in the same Institute (Lillis, 2006). Each department had produced a 5 year strategic plan but the impact assessments varied significantly depending on whether 'ongoing' work was included or excluded.<sup>5</sup> As a result, the author revisited the impact assessment and SP1 objectives were categorised as 'ongoing' if there was no evidence of additional work being undertaken over and above what was ordinarily taking place in the Institute. This raises an important issue as to whether a strategic plan in higher education should focus on new initiatives/new work beyond the norm or whether it should also incorporate ongoing work. This can be argued both ways. If ongoing activity is excluded from the plan it can be argued that it is less useful as a planning document as it does not take the full workload of the Institute into account. If ongoing activity is included in the plan it is considerably easier for the strategic plan to appear effective and its inclusion can deflect from the tougher issues, weaknesses and threats which need to be addressed. The strategic plan becomes more diffuse and less focused on key issues.

For the purposes of this impact assessment, the author chose to exclude ongoing activity on the basis that if the activity was ongoing, challenges and barriers would already have been addressed.

To estimate the impact of SP1 these results must be related to the program impact theory (Table 4). Proximal outcomes (objectives/strategies) must be evaluated if distal outcomes (goals) are to lead to improvements. To present a more accurate picture of the impact of SP1 a fine-grained analysis of program impact is given in Table 5. The "Percentage Complete" column was calculated as follows:

<sup>5</sup> An objective relating to "ongoing" work might for example be stated as "To act as a catalyst for social and cultural development by making available Institute resources, centres and expertise".

**Table 4** Linking program impact theory to the impact assessment (Data Source: Institute's Annual progress reports on SP1 (ITT, 2002, 2003; SP1, 2002))

Distal Outcome Goals	Proximal Outcomes Objectives/Strategies						Impact Assessment			
	Original Objectives	No Control	Complete	Modified	Retired	Incomplete	Ongoing	Original less (No Control, Ongoing & Retired)	Credit for work on incomplete objectives	Percent Complete
Teaching & learning environment	10	1	4	0	0	5	0	9	1.25	58%
Courses	2	0	0	1	0	1	0	2	0.5	25%
Access	1	0	0	0	0	1	0	1	0.5	50%
Research	4	0	2	0	0	2	0	4	0.5	63%
Entrepreneurship	5	0	1	1	1	1	1	3	0	33%
Partnerships	1	0	0	0	0	0	1	0	0	0%
Social & Cultural	3	0	0	0	0	2	1	2	0	0%
Staff	4	0	3	1	0	0	0	4	0	75%
Physical resources	5	1	3	0	1	0	0	3	0	100%
Management & operations	3	0	3	0	0	0	0	3	0	100%
Information technology	3	0	1	0	0	2	0	3	0.5	50%
Quality	1	0	0	0	0	1	0	1	0.5	50%
Marketing	1	0	1	0	0	0	0	1	0	100%

**Table 5** Threshold for percent complete

Percent complete	Result
Greater than or equal to 25%	SP1 is meeting 11 of 13 goals
Greater than or equal to 50%	SP1 is meeting 9 of 13 goals
Greater than or equal to 58%	SP1 is meeting 6 of 13 goals
Greater than or equal to 63%	SP1 is meeting 5 of 13 goals

- Objectives which were categorised as ‘no control’, ‘retired’ or ‘ongoing’ were subtracted from the number of original objectives. Retired objectives were subtracted on the basis that at some point a conscious decision was taken not to progress the objective, perhaps because it was no longer considered worth doing or a change in the environment had made it obsolete.
- A number of incomplete/in progress objectives had some of their associated strategies completed. To attempt to give credit for this work in this analysis, the “Credit for work on incomplete objectives” column is the sum of this work across all associated objectives<sup>6</sup> The “percent complete” column is therefore the
- Sum of complete objectives and “credit for work on incomplete objectives” as a percentage of
- the original objectives minus no control/retired/ongoing objectives.

The question now arises what as to what constitutes effectiveness. The objectives supporting three goals were fully complete in December 2003 (Management & Operations, Physical Resources and Marketing) and no progress was made on the Partnerships or Social and Cultural goal largely because they related to ongoing work. In relation to the remainder of the goals the threshold set for the percentage of work completed on each goal is a key consideration in determining whether SP1 was effective in meeting its goals. Unfortunately the literature base does provide an established or standardised metric for this. One interpretation for example could be that SP1 was effective because after 50% of the time period of the plan had elapsed at least 50% of the objectives/strategies had been completed on 9 of its 13 goals. Table 5 illustrates the results of setting the threshold at various levels.

Within a small band (50–63%) the interpretation of the impact assessment could vary significantly. Within this band five goals hang in the balance (Teaching and Learning Environment, Access, Research, Information Technology and Quality). The work outstanding on the Information Technology and Staff goals were related to national projects. A closer investigation of the work which wasn’t completed demonstrates that outstanding items relate to academic issues primarily (student numbers, retention, research funding, course development and delivery methodologies). SP1 was therefore significantly less effective on academic issues than in central support services or non-academic areas however. This raises questions about its effectiveness in impacting the academic heartland.

### Findings and conclusions

The stimulus for SP1 was an external quality assurance requirement coupled with the need for a long term planning process to address deficiencies in existing planning

<sup>6</sup> For example the Teaching & Learning goal had one objective which was 50% complete and another which was 75% complete, the sum of which was 125% or the equivalent of 1.25 objectives.

structures and processes. This concurs with the findings of Davies (2004) and Brennan and Shah (1997) in relation to driving forces for change in Higher Education. A rational strategic planning model was adopted and as alternative strategic planning models were not considered (e.g. incrementalism, foresight planning etc) it remains to be seen whether there was a more appropriate planning model for this particular higher education setting.

All major components of a strategic planning process were implemented largely as-intended and therefore a degree of confidence can be placed on the outcomes of the impact assessment. SP1 captured a considerable percentage of the issues being discussed in the Institute prior to its development. It also incorporated new thinking and in particular it gave central support services a voice in Institute planning. There is some evidence that weaknesses/threats were not being fully addressed in SP1 which concurs with findings in the literature relating to the failure of academics to face up to weaknesses (Davies, 2004; Drenth & Bernaert, 1989; House, 1993; Thorn, 2003). There is evidence that staff engaged with SP1 throughout and that it raised awareness of strategic priorities and influenced decision making particularly in its first year. One could argue that this in itself was a valuable outcome. A regular progress review system was instigated which assisted in monitoring progress on objectives. Aligning resources, organisational structures and budget plans to meet strategic objectives was problematic however with little success achieved in this. This concurs with Sallinen's findings in a study of Finnish universities that plans did not provide a basis for changing and restructuring existing activities (Sallinen, Konttinen, & Panhelainen, 1994). The reasons for this may relate to the constraints of the operating environment or inexperience with the process. It may also be fundamental mismatch between the higher education environment and the assumption made by the rational strategic planning model that an organisation can and should be shaped to meet the goals of its strategic plan.

The study highlighted the importance of the language used when writing plans developed using the rational strategic planning model. This requires clear, unambiguous and measurable targets to be set which caused some difficulties. The annual progress reports produced by the Institute were based on whether objectives/strategies had been completed at least once which does not guarantee that the changes had been embedded in the Institute. An important issue also when measuring effectiveness is whether a strategic plan in higher education should focus on new initiatives/new work beyond the norm or whether it should also incorporate ongoing work.

When ongoing work is excluded one interpretation is that SP1 was effective because after 50% of the timeframe of the plan had elapsed at least 50% of the objectives/strategies had been completed on 9 of its 13 goals. Within a small band however (50–63%) the interpretation of the impact assessment can vary significantly. Work which remained to be completed related primarily to *Academic* issues. There were particular difficulties in strategically aligning three academic Schools prior to the development of SP1 and SP1 does not appear to have provided a mechanism to address this. It is also worth noting that a significant proportion of development activity in the Schools/Departments was not included in SP1. SP1 had considerably more impact on non-academic areas than in the academic Schools.

Further research is currently underway on this topic which includes evaluating the effectiveness of institutional and School self study programs and strategic planning programs in four academic departments within the School of Science & Computing

in ITT which supported SP1. It is hoped this will provide in-depth insights into the reasons why SP1 was less effective on academic areas. The question remains as to whether the academic heartland needs a rational strategic planning process to be able to plan strategically or whether there are more suitable long term planning models for higher education.

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