Identifying Salient Learning Experiences: A Scenario-Based Method Enabling Industry-University Partnerships in IT

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Abstract

A generalisable method to inform the design of learning experiences responsive to, and empathetically located within, relevant contexts is described. The purpose of the method's preliminary implementation was to design a post-graduate program for mid-career IT professionals which acknowledges the inherently situated nature of knowledge, skills and behaviours and authentically reflects the field of IT practice. The method frames its activities by creating scenarios and exploring a company's responses to challenges within it. The scenario-based framework is conceptualised as a four stage progression which begins with a company creating a brief description of its own business context and specific situations that arise in it. The second stage draws upon a more extensive range of perspectives to discover alternative responses to challenges in the scenario and articulate some of the values that influence these responses. The third stage identifies the professional understandings required for each response and potential learning goals and indicators of attainment for these. The final stage enables one-to-one or one-to-many mapping of professional understandings to learning goals and attainment-indicators across the set of responses. The scenario-based method proved to be an effective tool for identifying and articulating industry-situated gaps in the understandings of mid-career IT professionals. The educational bridges required to foster better involvement of technological expertise in the evolution and execution of business decisions became more apparent to curriculum designers by immersion in the company's responses to the genuine challenges it faces.

Keywords: curriculum development; curriculum design; IT professionals; knowledge; knowledge in practice; scenarios

1 Introduction

"Knowledge resides in the user and not in the collection [of information]. It is how the user reacts to a collection of information that matters" (Churchman 1971 p.10).

To thrive in a rapidly changing global marketplace successful IT companies appreciate the dual necessities of internal flexibility and facilitating continuous learning by the enterprise and by individual employees. A company's competitive advantage lies in aligning business objectives with the unique knowledge it develops from specific experience (Barney, 1986). A company's most important resources are its knowledge (Zack, 1999) and its skill in integrating its knowledge with other assets in distinctive ways (Teece et al., 1997).

Paradoxically, an IT company's corporate decisions influence the competencies it requires while its competencies limit the decisions it can make. Employees involved in product development and maintenance are usually technically skilled with qualifications and experience in computer systems engineering, software technology and/or information systems. IT companies recognise that these people often need to acquire the professional understandings[2] to enable them to influence, evolve and execute strategic decisions, for example decisions enabling competitive differentiation of products and services. These understandings might include those that enable them to work effectively in multi-disciplinary teams and complex industrial and business structures, settings and customs. They are less likely to be founded on traditional knowledge than those associated with obtaining and maintaining technical competence. Instead, such understandings encompass a set of situated knowledge, skills and behaviours which reflect the company's most basic values and cannot be known independently of their context. They are dynamically and accumulatively created and implicitly embedded, within the community of practice, and acquired by social interaction and extensive experience.

Educational theorists often consider professional understanding as representational knowledge developed over time by an 'expert'. 'Experts' may differ from 'novices' by the complexities of these representations, and the efficiency with which they apply them, with relevance and validity, to a problem or issue (Bransford et al, 2000). Conceptions of expertise informed by theories of cognitive psychology are grounded in logic and science. These may ignore the need for comprehensive accounts of the sources, use and transformations of knowledge and processes as integrated sets of social practice embedded within the professional setting (Billet, 2001). A situated perspective of learning can contribute to an understanding of expertise by accounting for the dynamic nature and specific context of social practice. It

[2] For brevity, we refer here to the set of knowledge, skills, behaviours and values as "professional understandings"

enables us to identify, and acknowledge, how individuals come to know and act within a community, for example, by drawing upon the community's sociocultural, anthropological and cognitive resources and their interpretations of these (Cobb, 1998; Salomon, 1994). Comprehensive accounts of social practice embedded within the professional setting have increasing relevance to university teaching, particularly as the sector explores connections with industry partners in the education of a knowledge economy (DEST, 2000). For higher education to have value for all stakeholders, professional programs must traverse the mutual purposes of lifelong learning for participants and the contribution of intellectual capital to industry. This is of particular salience for career-oriented postgraduate programs, in which the development of robust knowledge and learning experiences must acknowledge the inherently situated nature of these understandings.

2 What Counts as Professional Understanding in IT Industry?

The most easily accessible alternatives available to those seeking to precisely identify items in the set of understandings required by IT professionals to adapt to their industry's needs are disadvantaged by what may be described as knowledge is in "the eye of the beholder". The meaning provided to the person using, rather than creating, the knowledge determines whether or not it is knowledge. A common avenue for those seeking to discover appropriate learning experiences and outcomes to support mid-career IT professionals is to interview individual technical or human resource managers. This provides a vertical insight into deficits in professional understanding of IT employees in specific companies informed by the "interpretative scheme" (Orlikowski, 1992) of those interviewed. Another widely used alternative is to consult demographic research or forecasts. These horizontal insights into generalised gaps in professional understanding cannot generate empathy with specific employment situations. Engaging in either or both of these activities tends to confirm that mid-career IT professionals need to develop understandings associated with business goals and processes and communication and leadership. However, neither avenue facilitates insights into the way these are situated in a specific community of practice nor the formative contexts and tacit knowledge that contribute to their development.

An understanding of the practical intelligence and tacit knowledge essential for individual effectiveness within an industry setting may be distributed across a wide range of people and components within that setting (Wagner & Sternberg, 1986). Methods that afford access to these understandings require observation of visible behaviours, actions, events, artefacts and systems within organisational contexts (e.g. Ciborra et al, 1995). Often these are impractically intrusive for companies, or too prolonged to enable higher education to adapt to industry's needs at the pace it expects (Ryan et al, 1996).

Our task was to design and develop a post-graduate program, for mid-career IT professionals, in which coursework authentically reflects the dynamic and integrated nature of the diversely articulated field of IT practice. A conundrum lay within the need to identify an alternative model for curriculum development which avoids, as Billet (2001) asserts, 'the objective and singular character commonly associated with academic programs, and the static epistemological truths that accompany them'. Like Cobb (1998) and Lave (1993), we sought to conceptualise professional understandings as 'domains of knowledge' embedded within vocational practices enacted within a social context. Our goal was to develop a method to enunciate these understandings '*in situ'*, which would inform curriculum development and design by reflecting authentic practice in the IT industry. In particular, we sought to reflect the nature of experience as transcendent of 'subject matter' alone (Tochon, 2000).

3 A Framework for Exploring Professional Understandings

Here, we present a generalisable framework of activities to identify and articulate industry-situated gaps in professional understandings which would inform the design of learning experiences responsive to, and empathetically located within, relevant contexts. This method frames activities by creating a scenario and exploring a company's responses to challenges within it. Scenarios induce people to express and explore situated and context-dependent knowledge and are an instrument to organise a variety of qualitative and quantitative information in a vivid and cohesive semantic framework. They have been successfully used to: design, engineer and evaluate human and computer systems; identify new strategies, focal issues and learning themes; indicate change and stimulate balanced responses to it; and, articulate common or contradictory implicit assumptions.

We propose that scenarios, by capturing and expressing the corporate environment, provide access to the meaning of professional understandings in the context of a community of practice. Such scenarios expose curriculum designers' own interpretative schemes to new cultures and ideas and provides higher education with a means to develop its own practice as a learning organisation able to respond to uncertainties (Argyris and Schon, 1978; Agarwal et al, 1997). The use of scenarios is particularly effective for exploring understandings in IT companies by virtue of their employees' familiarity with their applications in information systems and, occasionally, in corporate strategy planning.

We conceptualise the scenario-based method to identify and articulate professional understandings as a four stage progression (Figure 1). The scenario, created in the Stage 1, describes the business environment, predetermined variables, driving forces, opportunities, trends and priorities from the perspective the company's personnel. Stage 2 draws upon an extensive range of perspectives and knowledge bases to discover alternative responses to challenging situations in the scenario and express some of the values that influence these responses. Stage 3 identifies the professional understandings required for each response, a role and responsibility for the person accountable for the response and a criterion by which such a person might be selected. The role, responsibility

and selection criterion represent a goal for the achievement of the associated professional understandings and a benchmark by which they might be assessed. The final stage enables one-to-one or one-to-many mapping of professional understandings to the goals and standards across the set of responses.

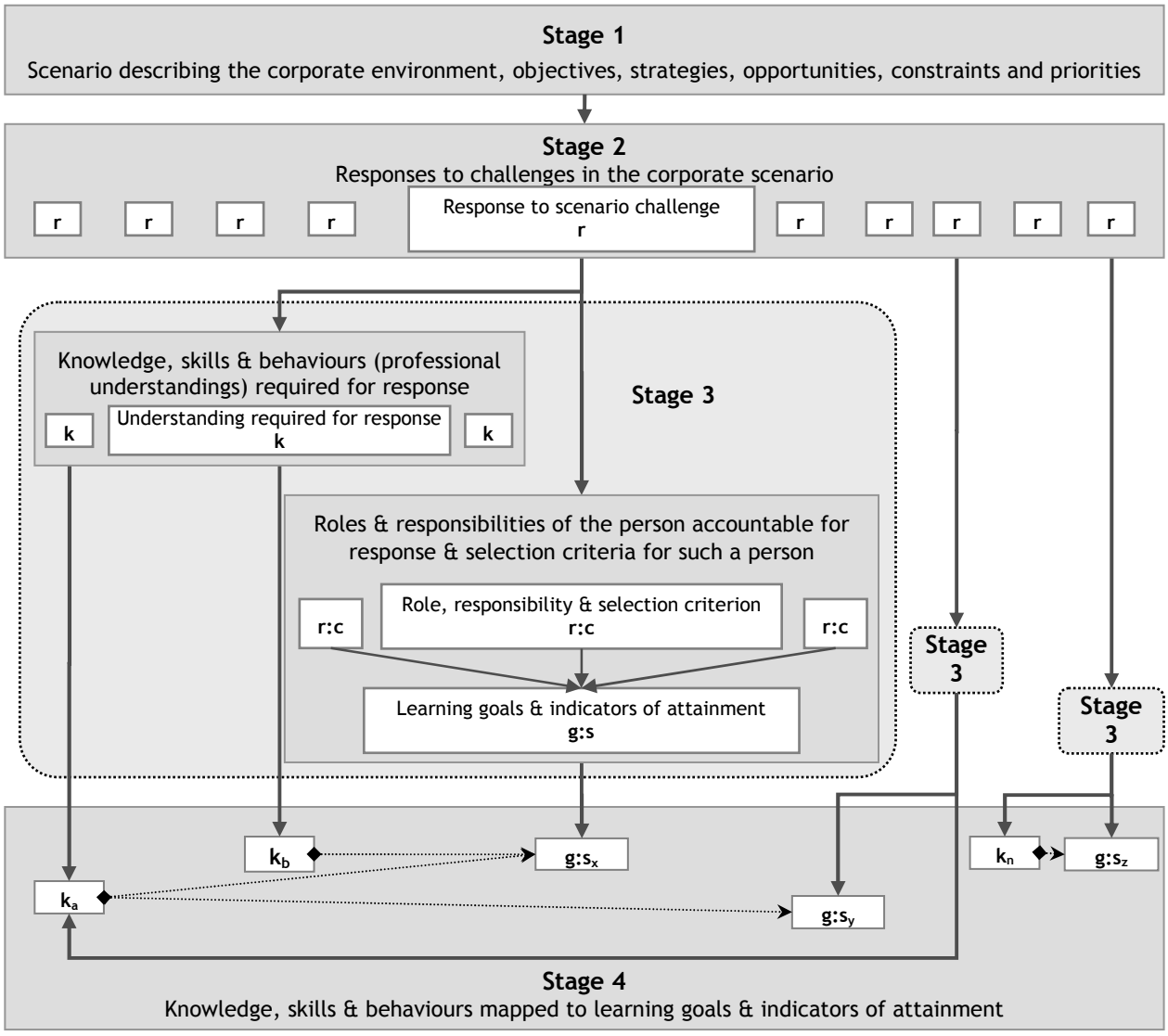

Figure 1: The scenario-based method conceptualised as a four stage progression through activities

4 Design & Implementation of the Framework

We executed activities in the scenario-based framework over approximately one month and involved 12 people for approximately 35 person-hours. Seven participants were employees of a local, mid-sized IT company and the remainder, including 2 of the authors, were academics and curriculum designers in research organisations. The first three activities (Figure 2) took place across three weeks and represented most of Stage 1 of the scenario-based process. The concluding activity in Stage 1 and activities in subsequent stages were compressed into a workshop at the company.

A precondition for the success of the reported activities is that the company recognises the importance of collaborative participation and its own social capital. Our observations of the interactions between employees at different levels and in different functional roles suggested that the company was developing a supportive environment with vertical and horizontal networking paths. Our implementation was additionally advantaged by an influential champion in the company which motivated participation by other personnel.

5 Stage 1: Scenario Creation

5.1 Encapsulating the Business Environment to Identify Professional Understandings

The first stage of the process commenced with a two-hour preliminary meeting at the IT company (Figure 2). Two higher education curriculum designers and a human resource and technical manager from the IT company established a broad understanding of target learners' expertise, explored the proposed scenario-based framework and sketched the scenario space and timing of related activities. As the scenario acts to connect to the world as seen by the company (after Wack, 1985), the technical manager was responsible for creating it. The meeting also intended to ensure that the technical manager recognised that the nature of the information in

the scenario and the interrelations within it would determine interpretations and the possibilities that emerged. It was agreed that the amount and complexity of information included in the scenario could be assimilated in one hour corresponding to participant's availability and familiarity with the domain.

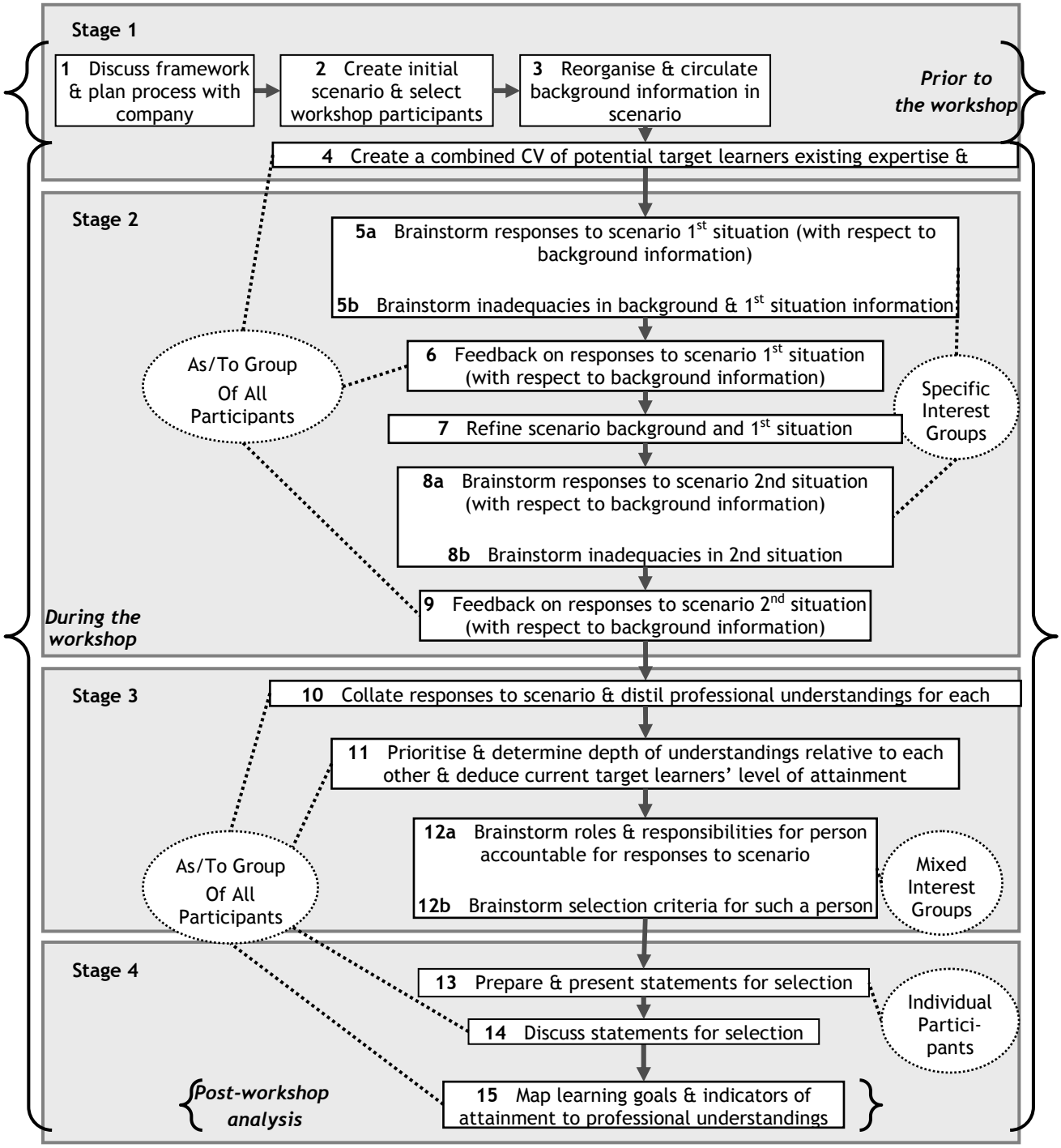

Figure 2: Summary of implementation of activities in the scenario based method

The purposes of activities associated with any scenario determine the granularity and the scale of the information presented and the extent to which it is empirical, imagined, certain or uncertain. Scenarios are used in systems design, engineering and evaluation to project the impact of possible human and computer events and interactions on one another and prognose solutions to address these. Such scenarios integrate the details of real information management tasks, extracted from software requirements analyses, with real and possible characteristics of people and social protocols. These scenarios present relatively low uncertainty and dynamism as their purpose is to predict consequences with some precision and prescribe binary decisions on proposed solutions. Scenarios created for corporate scenario planning require broader and more uncertain and ambiguous information since they are used to create more effective corporate strategies regardless of the unexpected futures that may transpire. Extending Herman Kahn's innovation (e.g. Kahn et al, 1967), corporate scenario planning aims to improve strategies by continuously and iteratively evaluating them across multiple diverging

futures and plausible business drivers (Schwartz, 1991). The scenarios used for enunciating the industry-situated gaps in professionals' understandings associated with evolving and executing corporate decisions should, like systems design, include experiential and probable information but at a granularity and scale more similar to that used for corporate strategy planning.

<table>
<tr><th>Technical Manager</th><th>Curriculum Designer</th><th></th></tr>
<tr><td rowspan="2">The company (109 words)
Size of company
Time established
Overview of solutions produced
Typical customer
Ratio of software development to implementation services</td><td>The company (282 words)
Size of company
Time established
Number of employers
Overview of solutions produced
Typical customer</td><td rowspan="5">Background Information provided Prior to the Workshop</td></tr>
<tr><td>Market & Customers (481 words)
Current customer base and niche markets
Current and forecasted sales, profits and performance indicators
Revenue generators and their percentage of total
Ratio of software development to implementation services</td></tr>
<tr><td rowspan="2">Additional Information (158 words)
Budget constraints
Current and forecasted sales, profits and performance indicators
Pressures to improve performance
Revenue generators and their percentage of total
Current customer base and niche markets
Required customer base and niche markets
Number of employers</td><td>The Product (79 words)
Overview of Product X
Market and customer base for Product X</td></tr>
<tr><td>Competition, Constraints, & Threats (150 words)
Budget constraints
Pressures to improve performance
Required customer base and niche markets
Current and emerging competitive threats</td></tr>
<tr><td>The Competition (84 words)
Current and emerging competitive threats</td><td>The Role (38 words)
Indication of the possible role of people responding to the challenges</td></tr>
<tr><td>“Scenario 1” (178 words)
Overview of Product X
Market and customer base for Product X
Desired redevelopments of Product X
Challenge and opportunities related to Product X
“Scenario 1” task</td><td>Situation 1 (108 words)
Desired redevelopments of Product X
Challenge and opportunities related to Product X</td><td>First task provided during workshop</td></tr>
<tr><td>“Scenario 2” (148 words)
Overview of Product Y
Changes in market and customer base for Product Y
Challenge and opportunities related to Product Y
“Scenario 2” task</td><td>Situation 2 (86 words)
Overview of Product Y
Changes in market and customer base for Product Y
Challenge and opportunities related to Product Y</td><td>Second task provided during workshop</td></tr>
</table>

Table 1: Organisation of the content in the scenario produced by the technical manager (left column) and modified by the curriculum designer (middle column) for circulation at appropriate times in the process (right column)

The technical manager's scenario contained 677 words organised under 5 sub-headings. The scenario contained two explicit and discrete situations, with the subheadings "Scenario 1" and "Scenario 2" (Table 1). These situations related to information labelled "The Company" and "Additional Information" but were separate from it. This allowed different sections to be introduced to participants at appropriate times during the first two stages of the process (Table 1). The sub-headings and their associated information afforded insight into the pattern of perception conditioned by the technical manager's experience of the assumptions and values of the company. For example, the characters he described were devoid of any personal attributes. While, appreciating that the scenario structure represented the technical manager's integrative scheme, some inconsistency between the information and the sub-heading impeded comprehension. For example, employee statistics and the ratio of the sales to services seemed inappropriately aligned with "Additional Information" and "The Company", respectively. Aware of constraints on participants' time in reading the scenario prior to the workshop the curriculum designer slightly reorganised "The Company" and "Additional Information" and inserted additional subheadings using the technical manager's terminology, without removing content or changing sentence structure (Table 1).

5.2 Articulating the Purpose of the Scenario

It is important that participant's exploration of alternative responses to challenges in the scenario, during Stage 2, is

not constrained. The technical manager had included under the "Scenario 1" and "Scenario 2" subheadings an instruction to:

> "Build a strategy and detailed plan"…"Plan should include immediate actions…including work packages, resource plan, schedule and budget".

The curriculum designer removed this task and added, under the sub-title "The Role":

> "The role includes, but is not limited to, high-level responsibility for: Strategy and direction of Product X's development and its support; Planning and scheduling of development projects, major product releases and product services; Resource planning, budgeting etc".

Information was circulated to people participating in the forthcoming workshop one week prior to their attendance. It included workshop objectives and participants details, in addition to the scenario information labelled: "The Company", Market & Customers", "The Product", "Competition, Constraints & Threats" and Role (Table 1).

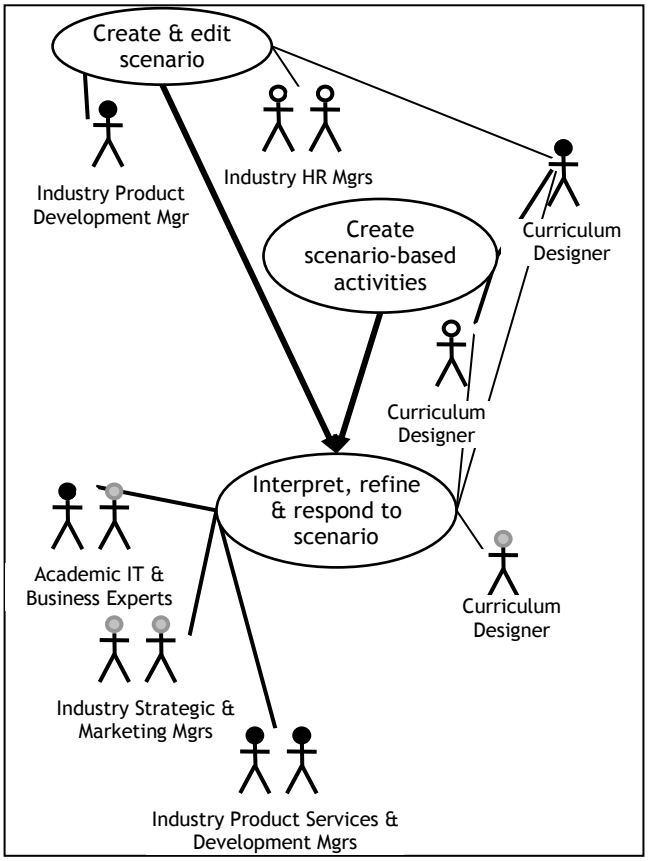

Figure 3: The perspectives involved in creating and responding to scenarios information and challenges.

Participants on the right hand-side primarily act to facilitate (thin connecting lines) the actions of those of the main actors on the left (thick connecting lines). Participants' perspectives are oriented behaviourally (unfilled actors), business (grey filled actors) and technically (solid actors)

5.3 Engaging Workshop Participants

To enable alternative strategies to be compared and evaluated it is essential that an extensive range of perceptions and perspectives contribute to exploring the scenario. Analyses of the rationales for responses to scenarios and their relationship with professional understandings from the company's perspective is made easier by comparing these with alternatives that might arise elsewhere in the same or different sector(s). The human resource managers nominated 4 participants from the company's corporate strategy and technical management which excluded company personnel involved in the preliminary meeting or the preparation of the draft scenario information. The curriculum designer selected two senior academic experts in business and IT to represent external perspectives (Figure 3).

The workshop took 2½ hours. Throughout, the curriculum designers facilitated an atmosphere of creative and open discussion. All discussions were recorded by audio and on paper. Activities commenced by confirming a shared understanding of the potential target learners. Workshop participants considered the current skills, knowledge and experience of those who require the curriculum in order for them to contribute to strategies that might be associated with the background scenario information (Figure 2, activity 4). The broad understanding of target learner's current expertise, established in the preliminary meeting, enabled the curriculum designers to facilitate discussion and shared understanding of a more detailed view of these. The curriculum designers explained to participants that the learners might include themselves, people who report to them or even people to whom they report. Corporate participants agreed that the majority of potential target learners had degrees in IT and varied technical experience of the company's products and services and in the domains into which these were sold. The resulting target learners combined CV provided a reference for identifying gaps in professional understanding in Stage 2.

6 Stage 2: Responses to Challenges in the Scenario

Stage 2 in the process was implemented by conducting two separate short "specific interest" group brainstorming sessions ((Figure 2: activities 5 and 8) interleaved with feedback sessions (Figure 2: activities 6 and 9). The brainstorms enabled qualitative comparison of the responses rendered by different perspectives. On the basis of predicted subjective perspectives participants explored the scenarios in one of three "specific interest" groups: strategic management, technical management and academia. A curriculum designer was assigned as facilitator and scribe to each group. Before the brainstorm sessions the curriculum designer explained that the scenario represented a set of "unstructured" problems for which there is no single "correct" solution, although some solutions may be preferable than others, and that responses to one aspect of it may have consequences for other aspects. In the brainstorming sessions groups discussed their responses to the challenges presented in the scenario and the rationale for these. At the conclusion of each brainstorm the groups also discussed any information that was absent from or incorrectly or poorly articulated in the scenario since this determines possible responses (Figure 2, activities 5b and 8b).

After copies of the first situation were distributed to each group participants discussed, with reference to the background information circulated before the workshop, the challenges it seemed to represent. Groups recorded their responses to the first challenge and the rationales for these responses on large, pre-formatted sheets of paper. Each group then presented, without interruption, the results of their brainstorm to the other participants which led to a discussion of the differences between these. The results of the specific group brainstorms were displayed. Facilitated by the curriculum designer, participants also refined the scenario background and situation information at a macro-level to address groups' concerns. This was displayed for reference in the second brainstorm. The second brainstorm considered responses and their rationales addressing the second situation (Figure 2) activity 8a). This was discussed in isolation of the first situation but with reference to the refined background information (Figure 2, activity 7).

6.1 Views of the World & Responses

All participants responded to the scenarios enthusiastically. Indeed, as with all activities in the workshop, containing participant's discussions within the allotted time frames presented a challenge to the curriculum designers. It appeared that participants found scenarios meaningful and discussions of responses interesting.

The curriculum designers facilitated a discussion to integrate the responses to both scenarios and rationales for them into a cohesive set of responses and rationales appropriate for the company.

Comparisons between the responses by strategic managers, technical managers and academics to the scenario suggested these groups attended to different aspects of the information and adopted different approaches to addressing challenges. Technical managers were most observant of technical information in the scenario and demonstrated a greater awareness of customer relationship details while strategic managers emphasised market intelligence. In contrast to the consistency with which strategic managers followed single-point strategic directions, academics proposed the widest range of alternative responses to the challenges and articulated their rationales for these in greatest detail. Discussions of this difference yielded several previously undisclosed insights of the company's organisational culture and practices.

Technical managers considered a greater variety of rationales than strategic managers but tended not to draw these together into cohesive responses. For example, technical managers referred to a range of implications of technological change and customer relationship management factors but did not link either concretely with other factors in the scenario. This may be linked with the tendency of technical, in contrast with strategic managers, to adopt "general problem solving" approaches to "global problems" (McCormick, 1996).

7 Stage 3: Professional Understandings, Learning Goals & Indicators of Attainment

The integrated response and rationale lists were numbered and secured to the whiteboard. With reference to each of the responses integrated into the curriculum designer asked what knowledge, skills, or behaviours would be required to decide upon and be responsible for this response (Figure 2, activity 10). The number corresponding to each response was entered into the first column in the whiteboard tabulation and the knowledge, skills and responses suggested were written in a column adjacent to it (Table 2: column A). When apparently intersecting knowledge, skills, or behaviours were suggested the curriculum designer facilitated discussion of their differences and similarities to each other and ensured that the description of the knowledge, skills, or behaviours made this explicit. For example, when participants suggested that "knowledge of the industry into which you are marketing into" distinctions were made between "vertical" and "horizontal" knowledge of the market, skills to obtain market information and the level of conceptual understanding these entailed. These distinctions are important to both ensuring common understanding and agreement on the knowledge, skills and behaviours and clearly determining and refining learning experiences.

Responses to Scenario	(A) Knowledge/ Skill/ Behaviour	(B) Priority	(C) Size	(D) Target Audience	
				Has	Has not
r_n	$k_{1.1}$				
	$k_{1.2}$				
	$k_{1..x}$				
E.g. "Understanding changes in market"	Knowledge of size of market, distribution, … etc	1	Broad		✓
	Understanding of the 'whole'	1	Deep		✓
	Skills to obtain information	1	Accom-plished		✓

Table 2: Tabulation on the whiteboard to record the relationship between knowledge, skills and behaviours and the responses required to address the scenarios showing example

Using, and where necessary iteratively refining, the tabulation of the knowledge, skills and behaviours participants discussed their application in a professional context (Figure 2, activity 11). Relating professional understandings to the responses to the scenario authenticates their use and transformation in the IT professional context and enables participants to decide on their relative priority more generally. The relative priorities of these professional understandings were recorded adjacently to the response(s) they contributed to

on the whiteboard (Table 2: column B). Participants' classifications of the required depth or degree of accomplishment of these understandings in the professional context generally and with respect to the response(s) they served were recorded in corresponding columns (Table 2: column C). The curriculum designer suggested two classes, one referring to broad or basic professional understandings and the other of deep or highly accomplished professional understandings. The discussion relating to the priorities and the depth of knowledge required revealed any divergences in interpretation of these professional understandings.

The discussion of professional understandings was completed by considering the way they related to target learners' current expertises and experience. Participants decided, with reference to the combined CV generated at the beginning of the workshop, whether or not potential target learners would have achieved the desired level of knowledge, skill or behaviour noted on the white board and ticks were placed in appropriate "has" or "has not" column corresponding to that understanding on the whiteboard (Table 2: column D).

7.1 Learning Goals & Indicators of Attainment

The third stage of the process concluded by establishing specific relevant goals for professional understandings and the expected standards of performance by which they might be measured. Participants were divided into three "mixed interest" groups each consisting of a strategic and technical manager from the company, an academic subject expert and a curriculum designer. The goal of each understanding directly corresponds to professional roles and responsibilities in the company and these roles and responsibilities relate to the responses required to address the scenario. Each group was assigned a disjoint subset from the complete set of responses. For each response the group constructed sentences describing a role and a responsibility of the person accountable for the response and a criterion that might be used for selecting a person for that role (Figure 2, activity 12). The list of roles, responsibilities and selection criteria each group produced were collated and displayed.

8 Stage 4: Mapping Professional Understandings to Learning Goals & Attainment Indicators

The concluding stage of the process involved two final activities in the workshop and further analysis after the workshop. The final activities in the workshop used role-play to extricate, at a meta level, some of the themes, directions and perspectives that influenced the responses to scenarios and mapping of professional understandings to learning goals and indicators of attainment. Participants were asked to imagine that they were applying for a position that encompassed all of the roles and responsibilities collated at the end of the third stage. It was explained that they satisfied each of the corresponding selection criteria and that to distinguish themselves to the selection panel they would present a brief statement in a mock interview for the position. This statement should address their understanding of the future of companies such as the one described in the scenario. All participants spent a few minutes preparing their statements which they then presented to each other (Figure 2, activity 13). This activity revealed participant's subjective positions with respect to the responses to scenarios, professional understandings, roles and selection criteria they had put forward. Technical manager's tended to emphasise examples of their experiences which matched the selection criteria. Strategic managers, in contrast, tended to emphasise their judgements of the company's current state and directions in which it should go.

9 Can Scenarios Define What Counts as Professional Understanding in IT Industry?

Complete mapping of professional understandings to learning goals and indicators of attainment is ongoing. Integration of learning goals and indicators of attainment described by the different "mixed interest groups" is considerably enriched by analysing the transcripts of recordings of the discussions of responses and their required understandings and cross-referencing these with statements made in the mock interview activity. The mapping process is enabling the curriculum designers to distinguish professional understandings which have unique learning goals and indicators of attainment from professional understandings which share goals and indicators of attainment.

The scenario-based framework of activities is being improved for use in the future with other companies. Findings from the implementation reported here are being discussed with the company concerned. Conscious of a possible weakness in our method we are exploring the affect that the curriculum designer's modifications of the structure of the technical manager's scenario, in the first stage of the process, may have had on orientating possible responses. We are also observant that using the word "strategy" as the first element in "the role" articulated for the scenario may have improperly biased the consensus reached in responses to situations by deferring to strategic managers and their skill in persuasion.

The scenario-based method has versatility for identifying various industry-situated gaps in professional understanding. The granularity, scale and degree of certainty in scenarios in implementations should reflect the likely nature of the industry-situated gaps established at the preliminary meeting.

10 Conclusion

The scenario-based framework we present seems to provide a valuable vehicle by which universities may distil professional understanding from the IT industry's community of practice and draw purposive links to pedagogical goals. The process provides an efficient and provoking way to genuinely engage and address the situated concerns of corporate personnel and expose curriculum designer's perceptions to validation and revision. In particular, it leverages curriculum designers own 'strategic learning' (Garvin, 1993) by immersing them in the challenges and situations faced by the

community of practice. In capturing context scenarios provide access to connections between tacit and strategic knowledge in affectively and behaviourally complex environments. Importantly, they make apparent the educational bridges that are required to foster better involvement of technical knowledge and innovation in the formulation of competitive corporate business strategy.

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12 Aknowledgements

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