How managers construe risk in business acquisitions

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Abstract: Business acquisitions are among the most important strategic investment decisions. Within a management control framework, there is a need for analysis techniques that reflect on experience and utilise organisational learning in future decisions. This paper provides an insight into managers' perceptions of the risk involved in acquisitions, as part of the learning process in building expertise in an organisation embarking on an acquisitions strategy. The paper reports on the results of a case study which elicited managers' risk constructs, in order to assess the risk profile of proposed business acquisitions. It uses personal construct theory with a group of managers to map the risks involved in acquisitions as an aid to future decision making.

Keywords: business acquisitions; cognition; management; return; risk; strategy.

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1 Introduction

On the subject of mergers and acquisitions there has been much debate about the motivation and thinking behind acquisitions and what accounts for those that succeed and, more often, those that do not. Success is commonly measured by the immediate stock market reaction, and the often elusive bidder gains, by use of event studies (see, for example, Agrawal et al., 1992 and Lin and Piesse, 2003). However, success could be perceived in other ways, in terms of progress towards strategic goals, defined in non-financial terms.

Some attempts have been made to explain the successes and failures in terms of acquisition performance, resulting in practical tips for would-be bidders (AICPA, 2002). These are broadly divided between pre-acquisition perspectives, with a focus upon the due diligence process (Perry and Herd, 2004) and the bidder making the 'right' decision (to bid or not, and if so at what price), and post-acquisition integration.

In decision-making terms, the same potential psychological problems as identified by Kahneman and Tversky (1979) in decision-making generally may be apparent in acquisitions and mergers (Gooding, 1998). The behavioural studies of organisational life post-acquisition focus upon cultural integration (Cote et al., 1999) and human resource management (Daniel and Metcalf, 2001). Most authors agree that an acquisition strategy is a high risk strategy, and few companies have mastered the art of managing the risk successfully.

However, studies of successful cases do reveal the value of learning from experience through a series of multiple acquisitions (Carey, 2000) building expertise (Haleblian and Finkelstein, 1999), and having an expert 'fast-track' manager or integration team (Levinsohn, 2002).

Whilst it is argued that internal audit may have a role in contributing positively to acquisition management (Cook, 1993), there is a lack of empirical research as far as post audit reviews are concerned, which explore how managers perceive the risks after the event. It is this sort of process that can help managers to learn from their experience. Perceptions of risk are important in understanding the behavioural aspects of acquisitions (Pablo et al., 1996) and managing the risks (Jackson and Carter, 1992). Studies of managerial perceptions of risk in decision-making have been undertaken with practising managers by Chapman and Ward (1997), Harris (1999) and Collier and Berry (2002), each using a different methodological approach.

Managerial and organisational cognition (MOC) is a field that has grown "out of a rejection of the presupposition that managerial decisions can be analysed adequately by using these hyper-rational notions of complete data, well-defined objective functions and rigorously logical choice processes" (Eden and Spender, 1998, p.2). This paper aims to elicit the strategic knowledge relating to the risk and uncertainty involved in business acquisitions from a team of managers faced with the pre and post-decision challenges in an organisational setting. It draws on the work of researchers in the MOC field, for example Huff and Jenkins (2002).

This paper aims to provide insights into managers' perceptions of the risk and uncertainty involved in making acquisitions, in the context of a learning process designed to build expertise in an organisation that was embarking on an acquisition strategy. The case study reported in this paper applied Kelly's (1955) personal construct theory (PCT) and a repertory grid technique (RGT) based on PCT (Fransella and Bannister, 1977). A form of cognitive mapping (Eden, 1992) was also used as part of the longitudinal study, which took place between 2000 and 2004.

The study was designed to elicit managers' risk constructs, in order to assess the risk profile of proposed business acquisitions. The aim for the organisation was to learn from early experience, having made a small number of acquisitions, in order to improve its acquisition management. The aim for the researcher was to demonstrate how PCT and RGT could be applied by a management team in this context to identify risk constructs, to develop a local theory of acquisition risk, which in turn may inform a more general practice-based theory of acquisition risk.

After reviewing key areas of relevant literature and outlining personal construct theory, the paper describes the research methods and context. The methods section explores the complex issues around using RGT and cognitive mapping with a group of people, in this case a management team, rather than individuals. The findings from the case study are then presented and discussed. The last section summarises the insights into risk assessment and managerial judgement in business acquisitions drawn from this case, reflects on the methodology, and makes suggestions for further research.

2 Literature review

Whilst the focus of enquiry for this paper can be viewed within a management control framework, there is no single discrete body of literature relevant to this research. Whilst there are multiple perspectives on the background to the problem, personal construct theory is the most relevant to the focus of this paper.

2.1 Contributions from multiple perspectives

Contributions from finance, strategy, decision theory, risk and project management are briefly reviewed here. Evidence from the finance field tends to follow the traditional definition of risk, where the chance of identifiable outcomes can be estimated as a probability and the outcome measured in financial terms, such that an expected present value can be calculated (Hertz, 1964). Hence the focus in finance literature has been on probabilistic risk analysis techniques (Dixit and Pindyck, 1995), not on the uncertainties managers speak about (Carey, 2000).

Within the strategy field there has been recent work on business acquisitions, as it has continued as a popular but risky means of business expansion. It has been argued that whilst over two thirds of acquisitions fail, there are still potential benefits to be gained from following an acquisitions strategy. Carey (2000) elicited views of a group of chief executives in the United States belonging to a club devoted to the pursuit of acquisitions strategies. They commented on the dangers of going beyond the core competences of a business, and the problems of reconciling cultural differences post acquisition.

Decision theory tends to follow the traditional definition of risk and focus on quantitative techniques (Huber, 1974) to account for risk in business investment (Hull, 1980). However, behavioural concepts of risk are seen by some decision theorists as key in understanding how acquisition targets are selected (Pablo et al., 1996).

Gooding (1998) argues that "the due diligence process creates momentum that causes companies to acquire businesses they know in their hearts are likely to fail". He posits that in this process, only confirmatory evidence is actively sought, and that once the full process is rolling, managers have mentally signed up to the decision and will ignore negative evidence anyway, escalating their commitment to the acquisition going ahead. Gooding advocates a facilitated risk analysis session to help management to avoid these pitfalls, consisting of a strategic risk profile, a risk/response matrix, and feedback and decision-making. He argues that this structured process can provide a useful checklist for the due diligence team.

Literature on risk reveals both arguments for risk assessment and management using quantitative approaches (Bernstein, 1996), and a view that actually risk cannot really be managed, in that unpredictability cannot be controlled (Adams, 1995). Adams (1995, p.7) draws attention at the outset to the distinction between 'objective risk' and 'perceived risk'. It is the issue of perceived risk that is of most relevance in this enquiry (Slovic et al., 2000).

Some significant work has been done in this area in the field of project management, both in project appraisal generally (Chapman and Ward, 1997), where a set of risk drivers were found, and in business acquisitions specifically (Chapman, 1998). In the latter work, Chapman argues for the use of the nominal group technique, as having less severe limitations than brainstorming or the Delphi method. Before a research method can be chosen to elicit managerial perceptions, a theory of cognition must be established (Eden, 1992).

2.2 Personal construct theory

Kelly (1955) developed his theory of personality based on many years of experience as a psychologist. The human brain constantly processes data drawn from all of our five (or six) senses. Kelly's personal construct theory (PCT) offers an explanation as to how this data is analysed and stored in the memory. PCT was originally based on an individual's perception of the world, and how people use bipolar constructs to make sense of their experiences and build their tacit knowledge.

An example of a bipolar construct which may be used by an individual when thinking about an accountant might be 'professionalism', with 'professional' as a label for the positive pole and 'unprofessional' as a label for the negative pole. Whilst similar labels might be used by many individuals, what each may understand as 'professional' might differ. It might differ because they have known different accountants, have had different experiences of dealing with accountants, or hold different views about the set of behaviours that they construe as 'professional'.

However, Kelly recognised the fact that people with shared experiences may construe things in the same way (his commonality corollary), or at least understand one another's construction (sociality corollary). Working with business managers who have a shared experience of acquisitions, having worked closely together in management teams, it is possible to use PCT to elicit group constructs, and to build up a cognitive map of the managers' constructs, showing the relationships between them (Eden and Ackermann, 1998). Other researchers who have used cognitive mapping at a group level include Bougon (1992), Larsen and Christensen (1993) and Johnson and Johnson (2002).

The possibility of discovering group constructs to evaluate the risk profile of business acquisitions depends on the identity of the group or team members, and whether the commonality and sociality corollaries are likely to be valid. Managers in the team would have to have previous knowledge and experience of appraising business acquisitions, and of working with each other. Otherwise one might find a range of contradictory views that are not reconcilable (Kelly's individuality corollary).

Constructs elicited from small management teams within an organisation may or may not reflect a wider shared view across the whole organisation. The most common way to validate group constructs is to present the constructs, their definitions and examples to a cross-section of managers or employees and seek feedback on their wider applicability (Harris, 1999).

This study applied PCT in a group context, and used a repertory grid technique to elicit the constructs. This is explained in the next section.

3 Research method and context

This research was conducted in an organisational setting with corporate executives at top management level. Participants had an organisational learning objective, which helped to shape the research agenda. The researcher had some personal experience of assessing business acquisitions as well as experience of using repertory grid techniques, which informed the choice of methods.

3.1 Research strategy

The overall approach to the research was an action research strategy (Eden and Huxham, 1996), which fitted with the organisation's agenda as well as the researcher's (Schein, 1999). Action in this case refers to managers' participation in an organisational learning process, where the knowledge and reflections of experienced managers are used to document perceived risks in a systematic way for others in the organisation to use and learn from. The focus of the action research in this case is to draw upon the relevant knowledge and experience of a small group of managers to generate through collective dialogue a local theory of acquisition risk. This will then be evaluated in terms of the transferability of that knowledge to other contexts and thus its contribution to a more general practice based theory.

In action research, choices need to be made on the techniques for data collection and analysis. Several data collection and analysis techniques were used:

- *Documentary analysis* of company reports and project papers – to gain contextual knowledge of the organisation, participants and business acquisition decisions.
- *Group discussion and individual interviews* – to assess range, commonality and sociality corollaries, to begin to surface issues/constructs on acquisition risks, and to validate results, especially the glossary of terms.
- *Repertory grid technique* – to elicit risk constructs for business acquisitions. This flows from the identification of Kelly's PCT as the theoretical perspective for the work (Cassell and Walsh, 2004, p.62), and is explained in Section 3.3 below.
- *Cognitive mapping* – to capture the perceived relationships between the acquisition risk constructs (see Section 3.4 below).
- *Reflective interviews* with key personnel – to add a reflective dimension to the study and gauge the response to the acquisition risk map.

3.2 Organisational context and the acquisition team

The organisational context for this research was a UK listed company classified in the financial times share information page as 'transport', with a market capitalisation of £425 million, employing approximately 16,000 people in eight European countries, aiming to grow by acquisition.

Access for this research project was negotiated with the legal director. The participants were selected by the legal director, who knew which managers were personally involved in the small number of business acquisitions so far made by the company. The criteria for selection agreed with the researcher were recent experience of strategic business acquisitions, and experience of risk assessment, with at least six months' work experience in the organisation in a managerial position.

The pool of managers in the organisation who met these criteria was very limited, but it proved possible to include financial and non-financial managers, and managers at different levels in the group. Thus, a 'cross-sectional' team from different strategic business units was formed to participate in this research. The researcher was concerned to ensure that diversity within the team was limited in order to satisfy Kelly's corollaries (see

Section 2.2 above). The team of six that emerged, satisfied this and the experience criteria. They were all English-speaking managers who had worked together previously, including two executive directors, two divisional level directors, an accountant, and the legal director.

Not all members were able to attend every team meeting, and the attendance varied from three to five members at any one meeting. However, all team members attended at least one of the four team meetings over the initial period of six months, participated in discussion on at least one of the acquisitions, and agreed the glossary of terms of the risk constructs that emerged. The researcher monitored the contribution of these managers to the group discussions to ensure that no one individual exerted undue influence over the results.

3.3 Repertory grid technique (RGT)

The repertory grid was drawn up using all of the business acquisitions within the participants' range of experience as elements (columns). The participants' words were used to define the risk profile of acquisitions as constructs (rows). In RGT it is usual, but not always the case, to allow participants to choose the elements and to generate the constructs, as part of a 'bottom-up' research strategy where constructs emerge (Cassell and Walsh, 2004). This fits within the action research strategy adopted here. However, the choice of elements needs to be constrained in group RGT to those within all members' range of convenience (Fransella and Bannister, 1977). As the phenomenon studied in this case is business acquisitions which occur relatively infrequently, this limited the size of the grid. This need not impinge on the validity of the findings (we will return to this idea in Section 5).

The number of elements within all members' range of convenience was four cases; A, B, C and D. A and B were recently completed business acquisitions viewed from a post-audit perspective, and C and D were at the pre-acquisition decision stage. Repertory grid techniques most commonly work on 'triads' (three elements at a time), and four cases translates to four triads (abc, abd, acd and bcd). Adding a fifth case would have meant including a business acquisition which was not within the shared experience range, due to one member's relatively short period of office.

Each triad was discussed by the team in order to differentiate the elements. This differentiation was elicited by asking participants to identify the ways in which two were considered to be similar and the third different. Acquisition risk constructs were suggested and discussed by participants to a point where a label and a definition of what was meant by it could be agreed upon. This discussion was tape-recorded so that the researcher could type up the glossary of terms to be validated by participants at a later meeting.

Once the group constructs had been elicited in this way, a rating scale of 1 to 5 (common in RGT) was used to record the team's assessment of the elements under each construct. This rating process essentially provided a risk profile for each acquisition, which was then averaged to find an overall score. This was used to rank the elements (first, most risky to fourth, least risky). Profiles were then displayed and discussed to see if these overall ratings and rankings made sense to participants.

As one would expect, not all risk constructs were judged to be of equal importance. A method of weighting risk attributes to capture the relevant importance of constructs was considered, which could be used to calculate a weighted average score. This was initially

attempted, but dropped from grid presentations as it made little or no difference to the simple averages calculated. However, at the team's request, the weightings were translated into simple categories, low, medium and high, to indicate relative importance.

In addition to capturing the definitions and relative importance of constructs, their inter-relationships were also explored. This aspect of the work took up a considerable amount of time in taped discussions, as the constructs were not mutually exclusive and could be clustered in several different ways. These data were further analysed to construct a form of cognitive map.

3.4 Cognitive mapping

Cognitive mapping allows a visual representation of constructs within an individual or group's cognition (Eden, 1992), and can be adopted as an alternative to RGT or may be seen as a product of RGT. Both can draw on individual or collective dialogue on the phenomenon being studied (Johnson and Johnson, 2002). Individual maps (idiographic) may be aggregated into a group map (Eden and Ackermann, 1998). This was not feasible when using data from a group RGT process.

The reason cognitive mapping was used in this case was twofold. From an organisational perspective it was used to provide an easy point of reference to transfer ideas from this experienced team of managers to others in the organisation. This form of visual representation can be seen as a transitional object. From the research perspective it was used to make sense of the relationships between constructs commented upon by participants, as a means of theorising from the specific cases of four acquisitions to business acquisitions in this organisational context more generally. This type of mapping might be classified as nomothetic (Eden and Ackermann, 1998).

McDonald et al. (2004) summarise the important debates in cognitive mapping. Johnson and Johnson (2002) highlight issues of group dynamics and cognitive mapping protocols. They also stress the ethical consideration that to bring sub-conscious construing to the surface and state the way an individual or a group thinks, affects the way they later behave (Johnson and Johnson, 2002, p.231). This could also be said of other research methods, such as grounded theory (e.g. Grundy and Johnson, 1993) or case studies (e.g. Swan, 1997).

At the team meetings specifically held to assess the risk profiles of the four cases, the shared constructs were discussed at some length and the group discussion tape recorded. The definitions were presented back to the team and refined, taking account of their feedback. Maps are often constructed 'live' by a group of participants using the oval mapping technique or a computer networked equivalent (Huff and Jenkins, 2002), and constructs may be elicited using the nominal group technique (Chapman, 1998). This assumes the mapping process starts from scratch with no pre-defined constructs. In this study, the constructs were already elicited using the RGT, so construing had already been captured.

The cognitive map was produced by the researcher from the team's construing captured in tape-recorded discussions, and the relationships between constructs noted in the glossary. As a product of the research, the initial map was sent to participants for comment. Feedback was sought on the map both as an accurate portrayal of the team's shared constructs and as an *aide memoire* for future use. The shading (dark, medium and

none) was added to indicate the relative importance of the risk constructs (high, medium or low), as agreed by the team.

The research commenced in 2000, with initial meetings held over a period of six months. Results from the RGT were produced and validated by 2001. The map was produced after further analysis in 2002, and was tested as an object of organisation learning over a period of a year. The research was completed in 2004 by reflective interviews with the finance director and managing director to evaluate the usefulness to the organisation of the action research.

4 Results and discussion

The results of the study are set out below. Firstly, Table 1, shows the basic repertory grid, with the twelve risk constructs relating to the four acquisitions, analysed in triads. Columns A to D show the similarities (S) and differences (D) between the acquisitions when compared three at a time. As there are four elements, this triad analysis leaves a single space in each row. Table 1 also shows the relative importance of the constructs, as perceived by the team, in the 'weight' column.

Table 1 Repertory grid

Elements (acquisitions)		*A*	*B*	*C*	*D*
Risk constructs (see Table 2)	Weight				
1. Strategic location	L	D	S	S	
2. Integration (with existing operations)	L	D	S		S
3. Familiarity with territory	H	D	S		S
4. Size of target acquisition	H	D	S		S
5. Timescale (to reap rewards)	H	D	S		S
6. Customer quality/continuity	H	S		D	S
7. Environmental issues	L	D		S	S
8. Technology	L		D	S	S
9. Management ability (target business)	H	D		S	S
10. Compatibility (of business culture)	H	D	S		S
11. Quality of information	H	S	S	D	
12. Acquisition type/terms	M	D		S	S

Table 2 shows a definition of each risk construct agreed by the participants as an explanation of the shared constructs they all understood. This was arrived at after several iterations, both during the group discussions and through the group feedback. Considerable effort was made by the team and the researcher to ensure the glossary of terms would remind them of what they had meant by the construct labels when using the output from this research to assess future acquisition opportunities.

Table 2 Definition of risk constructs

1. *Strategic location*: the geographic position in terms of its contribution to the corporate strategy (e.g. adding new locations to extend logistics coverage, creating synergy with existing locations, and/or achieving critical mass in order to control an area). See also integration and familiarity with territory. (1 = good, 5 = poor).
2. *Integration with existing operations*: the realistic opportunity to achieve benefits of operational integration with the existing network. See also timescale and technology. (1 = strong, 5 = weak).
3. *Familiarity with territory*: the extent of local knowledge in operational, market, political, legal and language terms. Ease of operating in new territory. This may also include distance from head office or divisional management. See also compatibility of business culture. (1 = good, 5 = poor). Note learning can reduce this risk pre and post acquisition.
4. *Size*: the scale of the acquisition relative to existing business, indicated by bid price (capital expenditure), assets acquired, turnover and profit, i.e. higher scores where shareholder approval is required. (1 = small, 5= large).
5. *Timescale*: the time period required for achievement of effective results (e.g. acceptable margins) post acquisition, 'from acquisition to fruition'. See also integration. (1 = short, 5 = long).
6. *Customer quality/continuity*: the customer profile and market position of the target business to be acquired, the stability of key customers and the likelihood of continuity of existing business post acquisition. Issues such as loyalty to present business owners and expectation that this continues (with or without continued involvement of owners – see also management ability). (1 = good, 5 = poor).
7. *Environmental issues:* the likely impact of the acquisition in terms of the political, legal, economic, social and community factors, i.e. sensitivity of sites (traffic congestion), health and safety issues (nature of goods stored/carried), and local policies/regulation. (1 = low impact, 5 = high impact).
8. *Technology*: the status of current IT systems in operation in target company, in relation to the 'state of the art' technology needed for IT to be a competitive advantage, or ease of turning IT into an advantage (1 = good, 5 = poor).
9. *Management ability*: the knowledge, ability, motivation and continuity of the local management team. The ability of the top team (who may be owner/managers) has less relevance if the plan is to replace them. This attribute would then be an assessment of the proposed new management (availability/capacity as well as capability). Alternative assumptions might be made about paying managers off in different scenarios for appraisal purposes. (1 = good, 5 = poor).
10. *Compatibility of business culture*: the compatibility (not necessarily uniformity) in terms of the values, beliefs and business practices of the people in the target company with the existing group/business culture. One example where practice might differ could be the sharing of information at different levels in the organisation. See also familiarity with territory, as country culture may differ whilst still giving customers a standard of service and experience which is compatible across borders. (1 = good fit, 5 = poor fit).
11. *Quality of information*: the reliability, validity and sufficiency of base data and other relevant information available to form the basis for the bid, i.e. whose data? What has emerged from any due diligence investigation. (1 = good, 5 = poor).
12. *Acquisition type/contract terms*: the nature of the acquisition (by shares or straightforward asset purchase) and evaluation of the likely contract terms and extent of warranties. (1 = low risk, 5 = high risk).

4.1 Acquisition risk constructs

Table 1 shows that four triads were sufficient to elicit a set of twelve risk constructs. Triads 'ABD' (resulting in five constructs) and 'ACD' (four constructs) revealed the most useful comparisons. In Table 1, S indicates the two elements judged to be similar and D the element that differed in eliciting each construct. Acquisition A is the 'odd one out' in over half the constructs, and acquisition D was not found to be the 'odd one out' at all. This fits with the nature of the acquisitions described below.

Table 2 shows the definitions of the risk constructs agreed upon by the team. Of the twelve constructs, half are very specific to business acquisitions (1, 2, 3, 6, 9 and 12). The other half (4, 5, 7, 8, 10 and 11) are very similar to constructs found by Harris (1999) for business development projects. Some could be categorised under Chapman and Ward's (1997) risk driver 'local conditions', e.g. technology, management ability and culture (8, 9 and 10).

Of the six acquisition specific constructs, it could be argued that 1 to 3 are context specific (more related to logistics), though location, integration with existing business operations and familiarity with the territory (whether geographically defined or based on some other form of market segmentation) could be widely applicable, especially in cross-border acquisitions.

The labels appear to be quite generic and are likely to be applicable in many organisational settings. However, the detail in the glossary in Table 2 reveals the highly personalised sense-making of these participants in their organisation. Strategic location and integration have a lot to do with the coverage of the logistics network, and environmental issues with traffic congestion. The labels could mean different things to managers in other industrial settings. The key to using RGT is to discover what they mean to participants and how they understand the issue or problem, i.e. risks in acquisition situations, at a point in time. Meanings might be expected to change over time, as more and different experience is gained and managerial cognition (both individual and shared) updated.

The initial participants' response to the outcomes was a good level of satisfaction with the risk constructs and definitions. They agreed to put these forward for wider circulation and testing across the organisation. The researcher presented initial findings at a corporate conference in October 2000 to gain the support necessary to extend the research.

4.2 Risk assessment

Participants were asked to rate each acquisition on each construct using a five-point scale for the purpose of risk assessment, with 1 of lowest risk and 5 highest. These were then summed in order to calculate the average risk score (using a simple average of $\sum x/n$).

The risk assessment ratings are shown in Table 3, with a ranking of the four acquisitions. The data for Tables 1 to 3 were all drawn from the team meetings and feedback sessions with the team.

Table 3 shows the results of the risk ratings of the four acquisitions. Acquisition A was considered to have synergy with existing locations and was expected to increase control of an area in the UK, whereas prospect B was adding a new location to extend European coverage. Acquisitions C and D were both in countries in Continental Europe where there was some existing presence. All were considered to be good acquisitions strategically, scoring 1 and 2 respectively on the first construct in Table 3 (below average risk for acquisitions in the team's experience).

Table 3 Risk assessment of acquisitions

Elements (acquisitions)	*A*	*B*	*C*	*D*
Risk constructs (see Table 2)				
1. Strategic location	1	2	2	1
2. Integration (with existing operations)	1	3	4	3
3. Familiarity with territory	1	4	3	4
4. Size of target acquisition	1	4	3	4
5. Timescale (to reap rewards)	1	3	4	3
6. Customer quality/continuity	4	3	4.5	4
7. Environmental issues	2	3	3.5	4
8. Technology	2	4	3	3
9. Management ability (in target business)	3	3	4	4
10. Compatibility (of business culture)	2	4	3.5	4
11. Quality of information	4	4	3.5	5
12. Acquisition type/terms	2	3	4	4
Average score (simple average)	2.0	3.3	3.5	3.6
Risk ranking	4th	3rd	2nd	1st

Acquisition C was scored as quite high risk on 'integration' due to difficulties anticipated in bringing quality systems up to group standards and in integrating operating systems. In terms of the third construct, 'familiarity with territory', these acquisitions scored quite differently. Acquisition A was in highly familiar territory (scored at 1, low risk) and B in new territory, D in unfamiliar territory, and C in fairly familiar territory. B was more distant from corporate headquarters than other acquisitions (scored at 4, above average risk). The risk differential was also quite marked in terms of the 'size' of the acquisition (construct 4), with acquisitions B and D being significantly larger on all indicators of size. Acquisition C was the most constrained acquisition by timescale (scoring 4 on construct 5).

Construct 6 'customer quality/continuity' was the only area where Acquisition A had a higher risk score than Acquisition B, due to a concern about the stability of a key customer in Acquisition A. There were also concerns about continuity raised in acquisitions C and D. Acquisition D scored the highest on 'environmental issues' due to it being in a country which is more regulated, and where people are considered to be more sensitive to such issues. Acquisition B was the only case assessed as higher than average risk on 'technology' where the target company was thought to be lagging behind in terms of group standards.

Acquisitions C and D were rated above average risk in terms of 'management ability' (construct 9), as C had a new management team and D was considered difficult to assess (see also construct 11) beyond the top level, and two executives were known to need replacements. 'Compatibility' was assessed as below average risk in Acquisition A (UK) and above average in C and D (where the target company was thought to be too internally focussed, not sufficiently customer driven).

All acquisitions were assessed as higher than average risk on the 'quality of information' available to appraise the acquisition (construct 11), with the only score of 5 being given in the case of Acquisition D. This was flagged up in the board paper as a risk that should be reduced by the due diligence process. From this study, and discussions at the post audit stage, it is debatable whether the due diligence process did in fact reduce the risk or increase it (as suggested by Gooding, 1998). Construct 12 reveals a difference in the nature of the acquisitions in contractual terms, where A was a purchase of assets and B to D by shares, with higher than average concern about C and D in terms of the complexity of the deals, and the uncertainty over the valuations.

Overall, Acquisition A was assessed as low risk at 2.0, and acquisitions B to D as higher than average risk at 3.3 to 3.6. B was scored as higher risk than Acquisition A on 9 of the 12 constructs, equal to A on 2, and only lower risk on 1 (customer quality/continuity). The average scores were the same (to one decimal place) for all except Acquisition C, which raised a question over whether the weighting was necessary. However, the team felt that a measure of relative importance could be useful to guide teams as to the length of time they might spend debating each issue.

The initial response to the risk scores for acquisitions included an expression of surprise at the relatively high score for acquisition B, based on a stated pre-acquisition perception that it was not above average risk, when considered alone. However, when compared to acquisition A, the team felt the result showed a realistic differential. After reviewing the completed risk profiles, with the benefit of hindsight they agreed that acquisition B had actually involved more risk than they previously thought, especially in relation to management ability and compatibility.

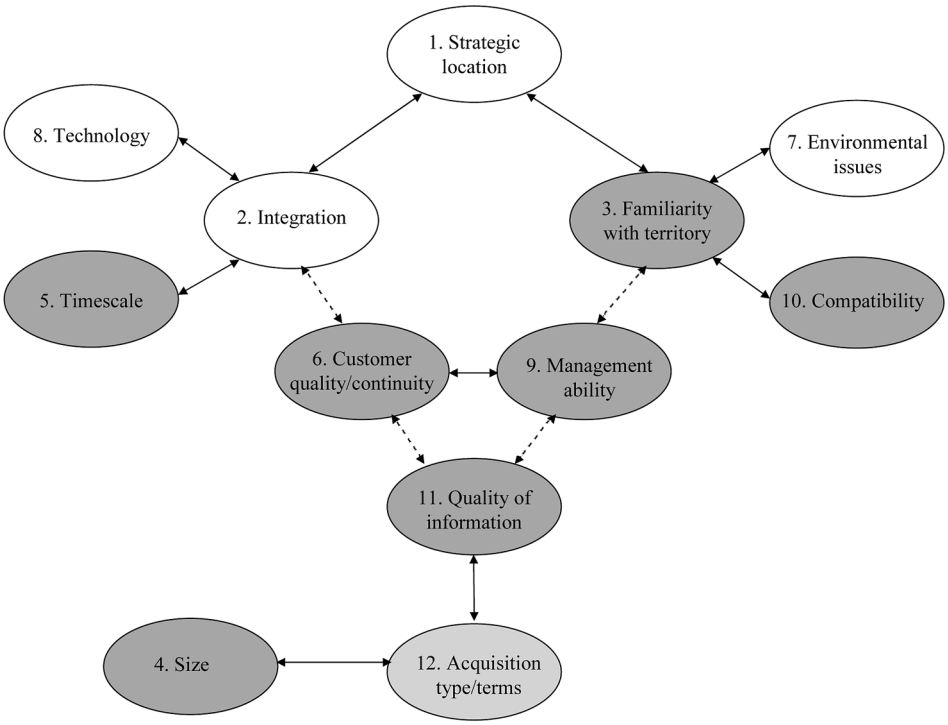
4.3 Acquisition risk map

During the discussions that took place, there were repeated cross-references between the constructs, in an attempt to clarify the definitions (Table 2). It was clear that there were some inter-relationships between constructs, but that these did not worry participants in terms of feeling they were double-counting a particular risk in their assessment of the risk involved in acquisitions. It was agreed to cross-reference the constructs in the glossary of terms.

For reasons set out earlier in Section 3, the discussion was re-analysed with a focus on inter-relationships, in order to map these in a diagram (Figure 1). The shading in the diagram indicates the three levels of importance attached to the risk constructs, with the heavier shading indicating a higher level of importance (from Table 1). The map was used to explore whether a visual representation was helpful in making sense of the risk involved in acquisitions.

Figure 1 shows the final version of the acquisition risk map, after the reflective interviews with the finance director and managing director. The benefit of hindsight, and the sense made of the mapping and relationship between constructs by the managing director were used to change some arrows in the map, but not to change any constructs. There is a debate in the cognitive mapping literature about whether this type of map is really a cognitive map or simply the output of a cognitive mapping technique (Swan, 1997, p.191). Whilst method-based limitations may be acknowledged, the result is seen as a workable diagrammatic representation of a conceptual framework of acquisition risk that is meaningful to participants. To the extent that it represents what participants agreed was a shared cognition of the problem, it may be described as their cognitive map of acquisition risk.

Figure 1 Acquisition risk map



The arrows do not indicate causal relationships, but rather the clustering of constructs and overlapping of risk areas reflected in the definitions. The arrows are double-headed to show that the map is not hierarchical or the relationships one-way. For example a high familiarity with territory (low risk on construct 3) may lead to an expectation that managers would be aware of the environmental issues in that territory. Equally, where managers are aware of a specific environmental issue, for example local land law or traffic congestion charging, it would make familiarity with territory key in managing the acquisition. Dotted lines in the map indicate that there is not the same strength of evidence for the relationship from the group discussion data, such that the researcher has inferred a relationship taking all the case study evidence together. The weaker links were verified by the managing director in the reflective interview, but not by the full team. Of the 13 links shown, nine drawn with solid lines were explicit in the data and four were more implicit. Overall the map is deemed to work well as a quick glimpse guide by participants who attended team meetings, but it is regarded as much lower value as a learning object for others if presented on its own. The glossary in Table 2 is seen as the key to drawing meaning from the map.

4.4 Reflections on organisational learning

In order to add to the construct validity and test the level of organisational confidence in the grid, the managing director (MD) and the finance director agreed to issue the grid and glossary to other management teams in the organisation and capture some wider feedback.

Having not been party to the initial team discussion, they have accepted the constructs, but the MD expressed a similar reaction to the risk score of Acquisition B as the original team. The risk score for this acquisition and its ranking amongst the four cases seemed anomalous until the rationales for the scores were revisited.

The anomaly was due to unexpected outcomes in terms of continuity of the management team, and the local methods of dealing with supply chain issues, where new knowledge had changed the overall impression of B. This highlighted the dynamics of risk assessment using RGT, where managerial cognition at a context-specific level is continually being updated.

Acquisitions C and D were deemed to be easier to assess, with two previous cases for reference and calibration. This fits with Kahneman and Tversky's (1979) availability and anchoring and adjustment concepts. Whilst the team's views on the risk profile of a specific acquisition tended to change over time in terms of the risk scores, the shared understanding of the conceptual framework as represented in the acquisition risk map was seen as more durable over time. However, even this could be seen as a transitional object in knowledge management terms.

5 Concluding remarks

In the team discussions about the acquisitions, there was a high level of consensus on the constructs and their definitions, and on the risk profile of the cases at a point in time. The use of the term consensus here means the participants reached agreement as to the constructs and meaning, not that they all started or ended the process with the same individual views. The evidence was that Kelly's commonality and sociality corollaries were working at the small team level. To ensure these axioms are not violated in future, guidance notes are needed to ensure group construing is valid. Team membership, group dynamics, relevant knowledge and the ability to reach consensus are potential barriers to this form of risk assessment being transferable to other teams or organisational contexts.

This study provides new insights into managerial perceptions of risk, in the form of a set of acquisition risk constructs which may be transferable into other organisational settings. Whilst these are captured in Figure 1, in a cognitive map which other managers (with similar experiences of acquisitions) may learn from, the definition of constructs makes a greater contribution to the understanding of risk in business acquisitions.

The study demonstrates how a psychological method (RGT) may enhance either a pre-acquisition risk assessment or a post acquisition review process. It shows that of four cases, three were perceived as above average risk using this method. It is not possible to say definitively whether this group learning process and the results of risk profiling have improved this organisation's acquisition management, as there have been no further acquisitions in the period since the four cases analysed here. However, one might argue that in itself this is evidence of learning, as no further risky acquisitions have been pursued since the review of these cases raised the level of awareness of key managers to the risks involved.

For managers in other organisations, the acquisition risk assessment grid presented here could be applied with the same constructs, but would be of greater value if drawn from their own set of constructs by replicating the repertory grid technique. It is suggested that this type of risk analysis activity, which identifies sources or causes of risk, would be

more useful if conducted pre-acquisition when there is still time to collect further information, vary the offer price or terms or pull out of the deal. As Jackson and Carter (1992, pp.44–45) argue, cause needs to be understood as action at the effect level is limited. In the case of acquisitions it is limited to integration management.

Therefore, managers may benefit from conducting this sort of analysis pre-acquisition to inform the decision and bid, and after the acquisition when more information is available as part of a post audit review or organisational learning process. This sort of activity could be embedded in a strategic information system, as part of the organisation's knowledge acquisition.

This study has focussed upon the risk perceptions of managers with only limited experience of acquisitions. There are limitations inherent in the methodology used, especially in relation to the construction of a group cognitive map. However, the set of constructs elicited does offer some generic learning as well as industry or organisation specific factors. This contributes to a practice based understanding of acquisition risk. In the case of specialist managers of business acquisitions there is the prospect of modelling risks into an expert system that other non-experts may be able to benefit from. In some industries an acquisition strategy can emanate from a 'buy or be bought' scenario, and any amount of pre-acquisition risk analysis will not deter the management from bidding. However, if risk taking is inevitable, then at least it might be taken knowingly.

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