

COMPETENCE REQUIREMENTS FOR MANAGING SUPPLY IN INTERORGANIZATIONAL NETWORKS

Louise Knight, Christine Harland, Helen Walker and Roxanne Sutton*

ABSTRACT. The authors address the growing call for research into the management of supply networks serving the public sector. Building on prior action research, this empirical paper focuses on the management of supply in interorganizational, health sector networks identifying the competence requirements (skills, knowledge, traits, and behavioural indicators) associated with effective team performance. Drawing on empirical data, the authors present a competence framework that aims to capture a team's tacit understanding of strategic supply management. Competence indicators are organized into six themes: network understanding; developing network position; relationship management; learning, knowledge and knowledge management; strategy formulation; strategy implementation. Finally, the relevance of the framework to boundary spanning personnel outside the purchasing function and to other organizations is considered.

INTRODUCTION

The value of a network perspective in describing and explaining (inter)organizational process and structure is widely acknowledged (see for example, Nohria and Eccles [1992]; Araujo and Easton [1996]). The success of many high-profile firms (e.g., Womack, Jones & Roos, 1990;

* Louise Knight, Ph.D., Helen Walker, Ph.D., Christine Harland, Ph.D., and Roxanne Sutton are, respectively, Senior Research Fellow, Research Fellow, Director, and Visiting Senior Fellow at the Centre for Research in Strategic Purchasing and Supply in the University of Bath School of Management. Roxanne Sutton is Principal Advisor at the Office of Public Services Reform with Her Majesty's Government Cabinet Office. Their research interests include the strategic management of supply in networks of organizations which provide public services.

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Jarillo & Stevenson, 1991; Kinch, 1992) has partly been ascribed to their capability in mobilising resources of, and aligning activities with, suitable counterpart organizations (Håkansson & Johanson, 1992; Johanson & Mattsson, 1992). The importance of their relations with other organizations, notably joint venture partners, suppliers and customers, is widely acknowledged (Contractor & Lorange, 1988; Ford, 1990; Kanter, 1994). The effectiveness of teams and individuals in supply-related boundary spanning functions such as marketing and purchasing has become an increasingly important priority. Considerable attention has been paid to the rising profile of the purchasing and supply function within firms (e.g., Gadde & Håkansson, 1994; Harland, 2001). These changes to the function's role and contribution to the organization have implications for personnel competence requirements.

Increasing complexity, uncertainty and dynamism of the business context (D'Aveni, 1994) means that organizations, teams and individuals have to develop, adopt and enhance new perspectives, knowledge and capabilities. In many parts of the public sector, purchasing and supply organizations have been restructured and supply chains and logistics services have been radically reorganized, as in for example the English National Health Service and the US Department of Veterans Affairs pharmaceutical service (<http://govinfo.library.unt.edu/npr/library/reports/DVA11.html>), during the 1990s. There is widespread recognition of the importance of supply practitioners (1) thinking and behaving more strategically; (2) thinking in terms of, and taking decisions in, supply networks, rather than remaining confined to the boundary of their own organization; (3) learning more effectively (Harland, 1995). Organizations such as the NHS Purchasing and Supply Agency in England and the U.S. Federal Acquisition Institute have developed competence frameworks for procurement professionals within public services.

Review of research aimed at understanding the competence requirements of boundary spanning personnel (specifically, purchasing and supply, but other functions include marketing and sales) indicates some important gaps and deficiencies. Few studies are empirical, and where surveys are used (e.g., Tucker, 2000) they fail to provide depth and richness of understanding that would be gained from in-depth interview and case-based research. In other instances, there is undue focus on professional discipline when, to understand better organizations' requirements, it would be more appropriate to consider

purchasing and supply from a process perspective, rather than be constrained by professional discipline or functional boundaries.

This paper presents findings of an empirical research project that begins to address some of these gaps. The project sought to develop a detailed understanding of organizational, team, and individual learning needs and processes associated with effecting the transition from 'doing contracting' to 'doing strategic management of supply' in a public sector context. From our perspective, strategic management of supply is underpinned by supply strategy, a concept grounded in the notion of externalising operations strategy thinking, tools and techniques (Harland, Lamming & Cousins, 1999) from the intraorganizational setting to the context of interorganizational supply networks. The focus of supply strategy is on improving supply processes across supply networks to improve performance for the benefit of the end 'customer'.

In the case of UK healthcare, where we have conducted extensive research since the mid-1990s, the end customer can be seen as patients and citizens/taxpayers. In the health service, efforts by purchasing specialists to move from the traditional role of contracting agent (organizing contracts between hospital managers and suppliers) to the strategic management of supply in supply networks have, in some cases, proved successful. Some teams have adopted network management roles (Harland & Knight, 2001a) such as innovation facilitator, information broker and advisor. As experience is gained, the range of circumstances in which they enact these roles is broadening and more teams are learning the roles. Nevertheless, the roles are still emergent. In other cases, the transition has proved more problematic, for reasons attributable to issues that can be categorised as features of (a) teams' strategic plans, (b) teams' abilities and motivation, (c) the supply network within which the teams operate, (d) the organizational context (Harland, 1996; Harland & Knight, 2001a).

Whilst prior research offers lists of skills, knowledge and attributes relevant to strategic supply management, it does not provide the detailed insights necessary to support this fundamental transition. For example, the importance of relationship management capability is widely recognised (Contractor & Lorange, 1988; Ford, 1990; Kanter, 1994), but there is little that offers a detailed view of what competence makes for good relationship management.

There are two main aims of this research. The first is to develop a more detailed understanding of the features that differentiate teams that are seen as more effective at strategic supply management than their peers. The second is to produce a management 'tool' to assist development of people in the focal organization. Thus, this project is very much applied research. However it also contributes to enriching our understanding of networking activities (Johnsen, Wynstra, Zheng, Harland & Lamming, 2000) and supply network management (Harland & Knight, 2001a). The resulting competence framework is distinct from much prior work in this field in that it is centred on team capabilities to perform various supply management roles in interorganizational networks, rather than individuals' needs for performing jobs within functions or disciplines.

The following section of the paper provides an overview of relevant literature, focusing on the changing supply role and activities associated with 'network working' and the implications for personnel competence. The next section describes the research method, and the wider research programme within which this project is undertaken, prior to setting out the research design and process in part four. The findings are presented in three sections: the first gives an overview of the factors that interviewees associated with competent performance; the second presents the framework of competence derived from the interview data and refined with further input from a group of participants; the third section seeks to relate these findings to prior literature relevant to competence frameworks. In concluding, we consider the implications for practice and future research.

PRIOR RESEARCH

There are many examples of case studies of organizations held up as networking exemplars within various literatures, such as the cases of Toyota (Womack, Jones & Roos, 1990; Dyer & Nobeoka 2000), Benetton (Jarillo & Stevenson, 1991; Camuffo, Romano & Vinelli, 2001), and Volvo (Kinch, 1992). Their relevance in this instance is limited. Firstly, most cases are manufacturing organizations within a network serving a consumer market. Their wider relevance to the service sector and the public sector is not clear. Secondly, the case descriptions offered by the researchers tend to describe (a) how effective network management relates to organizational success, and (b) processes rather

than the skills and knowledge that teams and individuals deploy in performing those processes.

For firms such as Toyota, their expertise in mobilising key members of their supply base to form an effective knowledge sharing network (Dyer & Nobeoka, 2000) can be seen as “core competence” (Hamel, 1994, pp. 12-16). That is, it provides competitive advantage and customer value and is not easily imitated. To achieve these outcomes, the organization’s focus goes beyond dyadic relations, to managing the network.

The notion of network *management* is contested. Authors such as Håkansson and Snehota (1995) have argued that networks cannot be ‘managed.’ Networks are constituted of multiple interactions between multiple actors over time. We cannot control these interactions and other actors and so, at best, organizations can cope within networks. In other fields though, the notion of network management is established (e.g., Kickert, Klijn and Koppenjan, (1997). In considering supply, one might view strategic management of supply in interorganizational networks as “supply network management.” Lamming (1993, pp. 249-251) sees the role of purchasing professionals as becoming “external resource management.” These concepts, though, are rather broad and indeterminate. Previously, we explored goals and associated activities beyond the traditional contracting role, and identified six supply network management roles (Knight & Harland, 2000; Harland & Knight, 2001a): information broker; advisor; network structuring agent; supply policy maker and implementer; co-ordinator; innovation sponsor.

What competence requirements are necessary for performance of such network management roles? Whilst there is prior research that offers insights to this matter, there are many limitations to its relevance and potential for us to generalise from it. For example, there is research whose focus is not supply (e.g., Chaston [1995] on SME development; Ritter [1999] on innovation), and research that takes a profession/business function centred view (e.g., Van Weele [1994] on purchasing; Millman and Wilson [1999] on sales). Social skills (Ritter 1999), political skills (Millman & Wilson, 1999), and a network orientation (Ritter, 1999) are widely emphasised. The contracting capability of personnel is also stressed (Cox, 1996, p. 66; Cox & Lamming, 1997, p. 61; Ritter, 1999, p. 469), including how to develop and align incentive structures.

The fragmented nature of the prior research, the limited amount of empirically based findings, and predominance of private sector, manufacturing research settings pointed to the need for an exploratory study to investigate competence requirements for managing supply in interorganizational networks. The next section describes the context within which the work was undertaken.

METHOD

Research context

This research is based in the UK public health sector, which is taken to comprise the National Health Service (NHS) and its suppliers. In 1991, a special health authority, the NHS Supplies Authority (the "Authority"), was established to improve and co-ordinate supply management, by providing a national contracting and logistics service and a local supplies operation service, in and for English NHS hospital trusts. In April 2000, the core purchasing and strategy functions of this Authority were formed into the new NHS Purchasing and Supply Agency ("the Agency"), an executive agency of the UK government's Department of Health, providing a policy lead to the English NHS on matters relating to purchasing and supply. This paper is one output of a major programme of collaborative research that began in 1995 between the research centre of which the authors are members and the Authority. The partnership continues with the Agency.

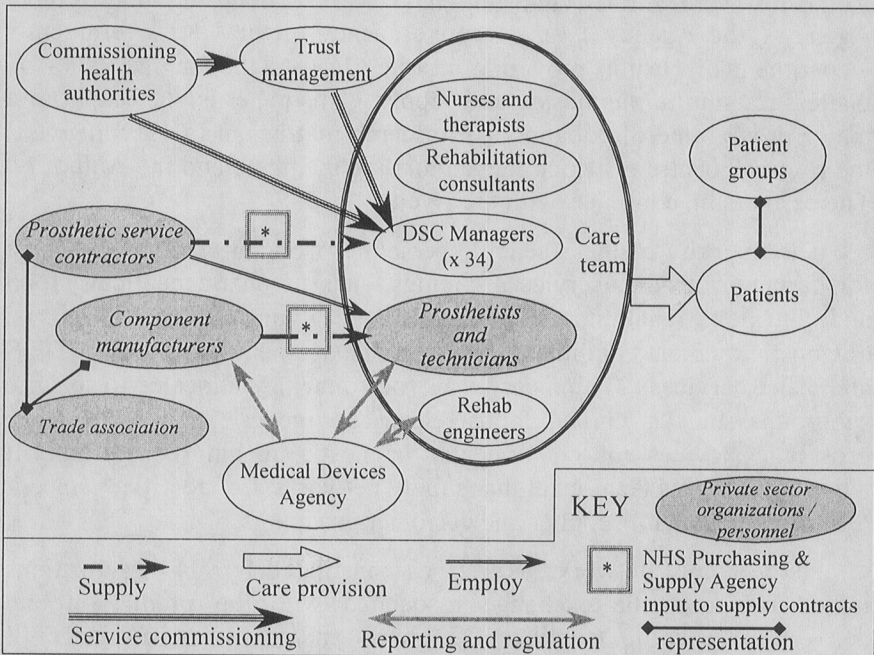
The majority of the Agency's personnel work in teams responsible for particular product/service groupings, such as pharmaceuticals; food and nutrition; rehabilitation services; medical and surgical products; diagnostic medical equipment; facilities management and utilities; IT/IS and office services. Within each team, personnel are allocated to specific subgroups such as chilled foods; electricity; generic pharmaceuticals; prosthetic services and components; diagnostic imaging equipment. It tends to be at this team level that supply networks are identified, since it often coincides with supplier and customer groupings.

Here, supply networks as seen as constituted by (1) organizations linked by economic exchange associated with the production and delivery of specific (families of) goods and/or the performance of specific (families of) services; (2) those organizations that have direct influence over the supply process, the end product and its usage, such as regulatory agencies, policy makers, research and development

institutions, and trade associations; (3) the relationships between network members (Knight & Harland, 2000).

An example is illustrated in Figure 1 – the prosthetic (artificial limb) supply network. In England, patients attend one of 34, specialist Disablement Service Centres, where personnel from a range of professions provide care. Service contractor employees (prosthetists and technicians) are part of the clinical team, along with NHS employed doctors, nurses and therapists. Each Centre is based on a hospital site, and Centre Managers are accountable to their host trusts, and to the health authorities, that commission services. Upstream the prosthetic supply network consists of service contractors, component manufacturers and their trade association. Agency personnel are involved in all contracting for prosthetic services and most purchasing of componentry.

FIGURE 1
Illustration of the Prosthetics Supply Network in England



Source: Derived from Harland and Knight (2001b).



The Medical Devices Agency plays an important regulatory role in this network, and well-organized patient representative groups (which operate locally and nationally) also have a high profile.

Compared to other UK health supply networks, the prosthetic network has few actors, the actors are highly interconnected and the supply network is relatively stable. Other supply networks are less stable for various reasons. First, their suppliers are more numerous and varied – they range from diversified multinationals to highly specialist SMEs; some are health specific, some not; some have highly active and influential trade associations, some do not. Second, their customer markets are more fragmented. Downstream, there may be complex buy groups involving surgeons, pharmacists, theatre nurses, clinical scientists, catering, facilities and finance managers, as examples. Third, in some supply networks, actors such as regulators or patient groups are highly influential and can destabilise the network. Fourth, the influence that the Agency teams have on the supply network also varies, partly as a function of the amount of spend that is influenced by contracts they have organized. Clearly, there is huge variety of actors, activities and resources across these networks, and practitioner-oriented outputs from this research must be relevant across these diverse settings.

Research design and process

The research aimed to address the following research questions (RQ):

RQ1: What do the organization, teams and individuals need to learn about operating in interorganizational settings to support the implementation of a strategic approach to the management of supply for the English National Health Service?

RQ2: How can (does) this learning occur?

RQ3: What are the factors that enable, or that constrain, such learning?

RQ4: How can this learning be encouraged and promoted?

Here, our focus is on effective supply management. What skills, knowledge and attributes do the more effective teams deploy that differentiates them from others? We are not concerned with all aspects of their competence (for example, personal and general management competence), but aspects influencing their roles in supply networks.

The principal research approach is action research (Eden & Huxham, 1996), seeking to develop theory through abductive reasoning (Coffey & Atkinson, 1996; Dubois & Gadde, 1999). Action research attempts to create new research based solutions to existing problems, generating theory through observation of practice. Within this overarching action research approach, for this specific project, twenty-two semi-structured interviews were conducted with managers and purchasing personnel in the focal organization. Most worked in teams that were considered to be capable of strategic supply management. Interviewees worked in a wide range of contexts from medical settings to working with facilities management professionals and the utilities industry. Most had a background in purchasing having worked as buyers in the NHS for much of their careers. Others had diverse career paths, in purchasing and sales but from different sectors such as utilities; others came from different professions within the health service (e.g., pharmacy).

The interviewer had previously met all but three of the interviewees, most of them on many occasions through participant-observation for previous projects within the action research programme. Whilst 'distance' can be regarded as offering a more independent and, thus, objective perspective, we found that having previously met the interviewees and being familiar with the context in which they work offered a number of benefits: it was easier to explain the research and build a rapport in the interview; it enabled a more reflective interviewing style since one can more readily critically evaluate the discussion; one could ask more searching and challenging questions where there are existing social bonds.

Interviewees were asked to consider the six 'network management roles' identified in a previous tranche of research (Harland & Knight, 2001a), to encourage a focus on strategic supply management, rather than more traditional contracting. To elicit insights into what differentiates high performers from adequate and poor performers, interviewees were invited to think of specific cases (teams and individuals) and identify how and why they differed from others.

Verbatim transcripts of the interviews were analysed for all references to skills, knowledge, traits, behavioural indicators and outcomes associated with effective and ineffective performance. Over 250 items of data were identified. The abductive approach to data analysis was characterised by "repeated interaction among existing ideas,

former findings and observations, new observations and new ideas” (Coffey & Atkinson, 1996, p. 156). A framework describing the features of high performance was drafted. It was then critically reviewed by a small group of managers (the ‘review group’), and revised. This joint development process is described in more detail below. First, though, the next section offers an overview of some of the factors described by interviewees as contributing to effective performance.

FINDINGS

Factors For Competent Performance

Predictably, in describing the features that differentiate high performers, interviewees mentioned skills and attributes such as relationship management and credibility. However, with further probing, they usually were able to be more specific and illustrate what underpins effective relationship management or credibility in the eyes of counterparts.

For example, one respondent identified that some buyers fail to deploy negotiation skills developed in dealings with suppliers in their interactions with NHS personnel, assuming instead that fellow NHS people are more likely to be in agreement. He spoke of a colleague whose reputation for dealing with hospital consultants was particularly good:

He is non confrontational, listens to what they are saying, and he will work around that and not even necessarily try to change their opinion. He will work around what he has to work with, and will put in alternatives. Again, it’s making them say what the issue is with it, rather than confronting them with it. Therefore, the decision is theirs, rather than us saying we will do it like this, which is never going to go down well.

Similar views were expressed in terms of dealing effectively with other health service colleagues, and lobby groups. The best teams and individuals are able to challenge others without being confrontational.

In developing credibility, a respondent explained that it was important to emphasise their purchasing expertise, though simultaneously demonstrating adequate technical knowledge of medical products and processes to be able to speak a ‘common language’ with, say, pharmacists and surgeons. Buyers need to distinguish the

boundaries of supply matters, and these vary by setting, by issue, and by counterpart. However, it is also recognised that the skill sets for effective purchasing and effective performance of the supply network management roles are different. Being good at 'buying' is necessary but not sufficient for good strategic management of supply.

Some factors are difficult to influence, and are controlled at an organizational, not team or individual level. For example, some counterparts mistrusted buyers since the Authority was, in (small) part, financed by retrospective rebates on certain contracts, and therefore NHS hospital personnel could question the motives behind recommendations to use national contracts. Interestingly, the Agency is fully funded by the Department of Health so this constraint has been removed, but now Agency personnel sometimes face constraints arising from their status as civil servants.

Other points raised by interviewees relate to the internal workings of the team and the organization. For example, internal information exchange and sharing and accessing one another's contacts were considered important. Finding the time to review and debate issues as a team was considered critical to identifying and assessing options for action. Learning by informal means was emphasised, as were skills of enquiry and research.

Lack of understanding of the "bigger picture" (NHS and/or business and strategy) was cited several times as a critical factor in explaining why some personnel are not capable of effective strategic supply management. "To gain any kind of credibility with senior clinicians you also need the knowledge of the wider NHS, the wider implications of what his relationship is with the supplier, how you're impacting on that relationship and some empathy."

Interviewees spoke of the importance of: keeping oneself informed through reading widely; a language 'base' (to understand others) and communication skills (to express one's own understanding); awareness of other sectors in business (acquired by working in other organizations or through interaction with fellow students on professional and management education courses).

Many of the interviewees spoke of how they try to achieve buy-in from their network counterparts. An inclusive and consultative style was considered important, though another respondent expressed concern that

being open and 'speculative' could be seen as lacking a sense of direction. Buyers need to know how to demonstrate commitment, to 'read' others' commitment and to appreciate reciprocity.

One interviewee emphasised timing and discretion. He considered it important to not be too open too soon about plans, strategies and objectives. He did not advocate secrecy but stressed a sense of timing in revealing strategy. Premature sharing could provoke resistance. Provoking resistance was also a potential outcome of injudicious use of power.

Flexibility was stressed by a number of interviewees in a variety of ways. Managers commented frequently on the difficulty of reconciling shorter-term, more operational objectives with longer-term, more strategic priorities:

It is being able to see the operational issues for what they are and to understand them, but to see the short/medium term strategies and the overall business strategy and fit them in. If they won't fit in, because things don't always fit together, have a flexible way of thinking to work in harmony.

The ability to plan well was mentioned, but it was also noted that flexibility to take up unexpected opportunities is important.

In this part of the paper, we have sought to outline some of the main issues raised by interviewees. Clearly, the attributes and behavioural indicators deployed for strategic management of supply (as with any management role) are complex, subtle and highly interwoven. It was necessary to undertake several iterations of data processing and analysis, with input from the review group, to produce an account of the findings in a suitable form for use in practice. The resulting framework of team competence is presented next.

Building the Team Competence Framework

Given the action researcher's concern with supporting the development of practice, it was important to present the findings in a form that facilitates their interpretation and application by practitioners. It was agreed that one of the outputs of the project should be a team-competence framework for strategic supply management.

Drawing on authors' prior experience within the research programme and in designing competence frameworks and on insights gained from

the interviews, the 250+ items of data from the interview transcripts were reviewed to cluster and refine them into a suitable format. Six overarching themes were identified. Each theme is elaborated through a set of statements (“descriptors”). As far as possible, descriptors are about behaviours and actions, rather than attitudes and dispositions, since it is easier to identify supporting evidence relating to behaviours rather than attitudes when evaluating competence.

In developing this management tool, we sought to meet a number of criteria. For the benefit of those familiar with supply strategy, the framework content was checked to ensure that the terminology was consistent with previous frameworks and guidance relating to supply strategy. For those not experienced in supply strategy, terminology was checked to ensure that the framework could be meaningful to someone with no prior knowledge. A balance was sought between keeping the framework brief and yet providing enough detail to support effective use. In particular, the overlap between clusters was minimised to reduce duplication, though it was not possible to eliminate it completely.

Table 1 briefly describes the main themes identified from the interview data. The first, network understanding, relates to the knowledge that teams need about the relevant networks. This knowledge might be deployed in developing network position, managing relationships, or formulating or implementing strategy. ‘Developing network position’ and ‘relationship management’ are differentiated because the former is more general, about role and profile within the network, whilst the latter more particular, focusing on specific relations and their development. Initially, strategy formulation and implementation formed one theme, but they were subsequently disaggregated since with formulation emphasis is placed on research and developing a shared strategic vision/direction, whilst planning and project management are the focus of implementation. The final theme—learning, knowledge and knowledge management—reflects the repeated mentions by interviewees of the greater range and depth of knowledge needed, new challenges they faced in its acquisition and the ability needed to make good use of data that are often incomplete and equivocal. Tables 2 to 7 (in which DH = HM Government’s Department of Health) list all the themes and their descriptors. The six themes and, within each theme, the descriptors are seen as complementary; the order in which they are presented does not imply relative importance.

TABLE 1
Principal Themes of Team Competence in Strategic Management of Supply

Network Understanding. A competent team has a comprehensive understanding of the network(s) within which the team operates.

Developing Network Position. A competent team has a planned approach to developing its position in the network, but is flexible enough to take advantage of opportunities that arise.

Relationship Management. A competent team actively develops and manages relationships.

Strategy Formulation. A competent team develops a strategy, backed by evidence and with clear objectives, that has the support of key stakeholders.

Strategy Implementation. A competent team plans and executes the strategy, monitoring outcomes against plans and adjusting strategy, objectives or actions as necessary.

Learning, Knowledge and Knowledge Management. A competent team actively promotes learning and enhances its expertise through developing knowledge and knowledge-management processes.

TABLE 2
Network Understanding: Competence Theme Descriptors

A competent team has a comprehensive understanding of the network(s) within which it operates:

- Understands the influence, culture and internal structure of other organizational players, and their relationships with other players in the network;
- Identifies influential individuals;
- Can define own links with network players and relative influence within the network;
- Understands the factors that influence others' views, behaviours and decisions;
- Understands others' priorities and objectives;
- Identifies where different parties' priorities and objectives do (not) align;
- Identifies (potential) key drivers for change and recognises enablers and constraints; and
- Understands the implications of DH/NHS priorities for the network

TABLE 3

Developing Network Position: Competence Theme Descriptors

A competent team has a planned approach to developing its position in the network but is flexible enough to take advantage of opportunities that arise:

- Develops good relations with influential players whose support will improve ability to achieve objectives;
- Works to improve relations with potentially less co-operative players;
- Establishes and maintains its reputation as the NHS's expert in matters of supply.
 - Is clear about the Agency's role, remit and limitations
 - Manages expectations
 - Successfully supports supplier development
 - Participates in educating NHS people re supply
- Is an active participant in important interest/working groups

TABLE 4

Relationship Management: Competence Theme Descriptors

A competent team actively develops and manages relationships:

- Builds and maintains both formal and informal relationships
- Identifies relationship 'gaps' – players with whom direct relationships should be established
- Assesses the quality of relations, and takes any necessary steps to improve
- Establishes effective communication channels
- Maintains contact with other network players, in particular regular informal contact with key individuals
- Knows how to demonstrate commitment and read others' commitment
- Predicts and deals with sources and causes of conflict
- Deploys excellent consultation skills
- Is able to be inclusive and build consensus, and recognise when this approach is appropriate
- Is persuasive (well presented arguments, backed by evidence)
- Is skilled at chairing / managing meetings
- Underpinning relationship skills required of individual team members:
 - Able to form and maintain relationships with people at all levels
 - Confident with aggressive/difficult players
 - Able to remain calm under pressure
 - Able and willing to challenge others without being confrontational
 - Able to deal with resistance and diffuse a difficult situation
 - Demonstrates tact and diplomacy
 - Is good at listening
 - Avoids complacency that can arise with familiarity
 - Is a good communicator (in writing and face-to-face; formal and informal)

TABLE 5
Strategy Formulation: Competence Theme Descriptors

A competent team develops a strategy, backed by evidence and with clear objectives, that has the support of key stakeholders:

- Undertakes research and analysis for strategy development
 - Undertakes own research
 - Accesses and/or commissions expert advice, research and published data
- Develops a strategic vision/direction
 - Demonstrates critical thinking/conceptual ability, and lateral/strategic thinking
 - Takes account of how change might be brought about, but is not unduly constrained by current practice and network structure
 - Takes account of future developments and others' priorities and expectations, especially DH and NHS
- Sets objectives and team priorities
 - Shows a clear route to desired strategic outcomes
 - Objectives are aligned to corporate mission, DH and NHS priorities, and the team can demonstrate how its contribution fits into the bigger picture
 - Demonstrates good judgement in the planned allocation of resources having carefully assessed where they can make the most impact, and balances costs and benefits.
 - Undertakes risk analysis, appropriately using tools and techniques, and plans how risks will be managed
 - Recognises the price of inaction
- Engages others in the network to gain their input and support
 - Prepares convincing cases, clearly argued and backed by evidence
 - Considers proposal from the point of view of other network players
 - Consults appropriately
 - Actively seeks the support of key influencers in the Agency, and the network
 - Deploys negotiation skills to deal with all network players, not just suppliers
 - Deals effectively with resistance and inertia

TABLE 6
Strategy Implementation: Competence Theme Descriptors

Strategy Implementation:

- Plans and executes the strategy, monitoring outcomes against plans and adjusting strategy, objectives or actions as necessary.
- Plans and prepares for implementation by:
 - Preparing an implementation plan which takes account of network position, and resources;

TABLE 6 (Continued)

- Working with team leader to prepare the team (e.g.; training, developing relationships, acquiring/redeploying resources);
- Communicating effectively and at the right time with all relevant parties; and
- Working with team leader to consider how innovation in the contracting process might release resources for strategic work.
- Executes plans efficiently and effectively by:
 - Using power/mandate judiciously and selectively;
 - Deploying excellent project management skills;
 - Undertaking supplier development, and supply education as necessary; and
 - Co-ordinating appropriately with other teams internally and others in the network, especially other agencies and government departments.
- Monitors, reviews and revises strategy, objectives and plans by:
 - Monitoring outcomes and results and can clearly describe progress with respect to strategy and objectives; and
 - Monitoring other developments and assesses their impact.
- Demonstrates flexibility and is able to adjust strategy, objectives, plans as necessary.

TABLE 7

**Learning, Knowledge and Knowledge Management:
Competence Theme Descriptors**

Learning, Knowledge and Knowledge Management:

- Actively promotes learning and enhances its expertise by developing knowledge and knowledge management processes.
- Develops learning, knowledge management and research skills, and uses these appropriately by
 - Asking for help when needed
 - Accessing information from a wide variety of sources
 - Undertaking pro-active horizon scanning, and develops relationships to support the process
 - Coping well with complexity and (apparent) chaos
 - Coping well with large amounts of information
 - Dealing appropriately with incomplete or inaccurate data
- Develops and actively sustains “learning culture” by
 - Recognising and applying learning
 - Encouraging innovation within the team and by others
 - Supporting others’ learning and knowledge development in the network
 - Dedicating time and other resources to learning

TABLE 7 (Continued)

- Has sufficient knowledge of the following areas to enable effective performance:
 - Corporate context (how the Agency relates with stakeholders); * the NHS;
 - Supply markets;
 - Users of goods/services and health care provision;
 - Agency contracts;
 - Key current issues;
 - Policy and strategy;
 - Other key players in the network.
- Proactively identifies and takes steps to deal with important gaps in knowledge by
 - Committing resources to developing own knowledge base.
 - Recognising knowledge acquired through its activities, and its potential application in the performance of new roles and activities.
 - Being good at persuading others to share information.
 - Develops its expertise and knowledge through informal exchanges with network contacts.

Throughout the analysis process, the primary focus was on team competence, to align with the view that it is a team that enacts a network management role. Some of the entries clearly relate to personal attributes of team members and, arguably, these could be treated separately from the remainder of the framework. They have however been included on the basis that, though the attribute resides with the individual, it is deployed for the benefit of team performance. Furthermore, not every member of the team has to have the attribute; what matters is whether there are enough team members with the attribute to meet performance needs. Some of the attributes are divergent and it is unlikely that one person would have the full range.

DISCUSSION

Some apparent contradictions between interviewees represent a 'tension' that buyers must constantly consider, for example between openness and discretion; being consultative or directive; deferring to others or asserting one's position. "You have to be able to stand your ground and argue your case and be robust and be aggressive, selectively. At the same time you've got to be able to step back, be passive, be a service provider, be meek, and occasionally do what you're told."

This versatility lends weight to our choice of focusing on competence at the level of the team. Different personnel might take a lead role in different circumstances; an individual's weakness in one situation might be a strength in another.

Efforts were made during data processing to identify both input and output indicators of high performance in the strategic management of supply. Output indicators can be seen as 'signs of success'; so, for example, how would a team know that they had succeeded in developing a good relationship with a supplier? In this case, invitations to present at sales force meetings or the provision of unsolicited information about a supplier's strategic plans were cited as examples. Generally, however there were few 'signs of success' relative to the number of input indicators.

In a preceding tranche of research in the programme with the Agency (Harland & Knight, 2001a), we identified that, whilst some skills were relevant to all six network management roles (e.g. communication; negotiation), others could be linked more closely to specific roles (e.g. information broker and IT expertise). However, in this study, links between aspects of the competence framework and particular network management roles are not so evident. This might be a consequence of the process and/or reflect that competence transferability between roles is high. We suggest that differences would be more apparent in output indicators, than input indicators. To address this matter, further empirical research would be required.

Munro and Andrews (1994) pointed out two important limitations of the competence approach. Firstly, it encourages focus on the job and the jobholder to the exclusion of organizational factors. Secondly, there is a risk of "capturing the past, not preparing for the future". In this project, organizational factors, such as corporate culture and policies, were specifically addressed through consideration of organizational learning requirements. It has been emphasised that team competence and motivation is one of several categories of factors (Harland & Knight, 2001a). The competence framework is future-focused in that it represents the emerging roles and contribution to the NHS of the Agency, not the established role of contracting agent.

Various methods are used to research and present competence "standards" (compare for example, Fletcher [1991] on National Vocational Qualifications; Woodruffe, 1992; Spencer & Spencer, 1993).

Considerable emphasis has been placed by some (notably Spencer and Spencer, and NVQs) on demonstrating objectivity, both in terms of deriving the standards and their subsequent use in assessment. This concern with the validity of HR competences stems from their use in recruitment, and is based on the perceived need to prove the link between an individual's performance in assessments against the competence standards and future job performance (Knight, 1997).

The competence framework is intended to capture the growing, but fragmented and often tacit, understanding within the organization of what underpins effective strategic management of supply. The accompanying guidance stresses that the framework is offered as a basis for intra-team dialogue for development planning and that teams will need to judge subjectively whether they are competent. The guidance also emphasises that teams should back their judgement with evidence, to make it easier to compare their competence at different points in time. Initial feedback from the review group and other potential users of the framework has been very favourable, suggesting that it describes well the attributes and behavioural indicators of teams within the organization that are effective in strategic supply management. The guidance developed to support use of the framework has also been commented upon favourably but has yet to be tested, although early adoption by HR is encouraging. The framework was made available to Agency staff on their internal web site and used in assessing and developing team competences.

However, we suggest that the potential value of the framework and associated guidance lies not only in its prospective use as a 'tool' for human resource management to measure competence and plan its development. The content of the framework brings together and articulates knowledge that is currently fragmented and implicit. Considerable learning at all levels, organizational, team and individual is necessary to take on the supply network management roles. Appropriately communicated, frameworks such as this can help to shape shared conceptions of effective performance and how it is achieved and contribute to "sensemaking" (Weick, 1979).

In advocating that teams such as those at the NHS Purchasing and Supply Agency should take on the new, much wider remit of strategic supply management, we are recommending they adopt a network perspective, emphasising connectedness (Araujo & Easton, 1996, p.

100), and recognising and coping with the increased complexity and uncertainty it brings. Political and social skills are at a premium in this new context. "Network managers are not dealing with one participant, nor with one process. They have to deal with several games being played at the same time and a series of games played over time" (Klijn & Teisman, 1997, p. 109).

CONCLUSIONS

Through participative action research we have developed a framework built on the competence requirements of teams engaged in strategic supply management. However, the framework which evolved from a network management perspective may also be relevant to boundary spanning teams that are not directly involved in purchasing. Although the focal organization is unusual in its position in supply networks (at the public-private sector interface), and its role as a contracting agent on behalf of others, many of the competence indicators (in Tables 2 to 7) may be highly relevant in most strategic roles at organizational boundaries. Such competences are not 'core competences' in the sense of the term defined by Hamel (1994) since they are not unique to an organization and an essential part of its competitive advantage: different organizations may share similar needs, but place different emphases on different aspects of competence. Nevertheless, within the NHS Purchasing and Supply Agency at least, they may be regarded as essential competencies. The generalisability of this framework for boundary-spanning teams would need to be tested through further empirical work. As recognised by the U.S. Federal Acquisition Institute (2003, p. 2), the transferability of competencies across different parts of the supply management community is an important issue. The findings align themselves well with prior research and theory, particularly industrial marketing, purchasing and policy network management. The contribution of this paper draws on its action research approach, developing theory through observation of practice to build a competence framework that is highly relevant to practice within the focal organization.

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