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Risk in Partnerships Involving Information Systems Development: Lessons from a British National Health Service Hospital Trust

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EXECUTIVE SUMMARY

This is a case study of a US$ 30 million project to establish a new form of rapid healthcare service delivery within the context of a highly politicised National Health Service Hospital (NHS) Trust in the United Kingdom (UK). This project involved large-scale redesign of long-established healthcare procedures and the development of sophisticated new information systems (IS) through a unique partnership between the public sector (the UK's NHS) and a number of private sector companies (a software developer, a facilities manager, a hardware vendor and a builder). The case study concentrates on, what is often, one of the more important determinants of the success or failure of such partnerships involved in information systems development, i.e. 'risk'.

BACKGROUND

At the core of risk is the possibility of loss, which arises whenever uncertainty exists about the outcomes of possible actions (Yates & Stone, 1992a). According to Rowe (1997): "If risk implies something unwanted or to be avoided, risk is then associated with consequences that involve losses to the risk-taker" (p.23).

It is the probability of loss which is actually described in practice, although a more thorough consideration of risk involves three important but imprecise elements: (1) the type of possible loss; (2) the significance of those losses; (3) how uncertain are those losses (Yates & Stone, 1992b). Ritchie and Marshall (1993) point out that there may be a high degree of interaction between risk and uncertainty in any particular decision situation, i.e., decisions involving high degrees of uncertainty are also likely to be seen as high-risk situations. Hence the need for appropriate strategies to reduce uncertainty and by association, risk.

Information systems (IS) risk management techniques are important devices for minimising unwanted problems in IS development projects (Baskerville, 1991; Boehm, 1989; Saarinen & Vepsalainen, 1993). Uncertainty within the context of IS development often arises from lack of understanding between business and IS staff (Reich & Benbasat, 1996). Uncertainty, and therefore risk, may also arise

from other factors such as, multiple implementers, inability to cushion the impact of the project on others (Alter, 1979), technological complexity, the degree of novelty or structure of the system being developed, the extent of technological change as well as project size (Zmud, 1980), among many others (Jiang et al., 2000).

This paper specifically focuses on the risk associated with IS development projects that involve multiple partners. In projects where several partners collaborate, not only is uncertainty increased by each partner having different objectives, but by conflicting common objectives. On the one hand there is the need for widespread diffusion of information within a consortium, which contrasts strongly with the need for secrecy and appropriability within profit-seeking companies. This means that conflicting objectives exist when partners collaborate, making risk even more difficult to estimate (Catsbaril & Thompson, 1995).

The case reported is of the perceptions of risk by partners in a consortium involved in creating a new medical facility, involving redesigned working practices, the development of sophisticated information systems, and new building design. Hospitals can respond several ways to risks. They can vary prices, change service mix, or reduce variation in resource use (Friedman & Farley, 1995). The creation of an internal market within the UK's National Health Service is forcing hospitals to pay increasing attention to financial planning and the management of business risks.

Our analysis reveals a number of different types of risk associated with IS development and consortium collaboration. Ownership risk is the risk that collaboration will lead to a loss of ownership or control of vital or valuable assets generated by a collaborative project. This type of risk depends on (i) the dependence of one partner on another; (ii) the market value of the final product to each partner; and (iii) the separateness of the partners' markets. Ownership risk is important in projects that involve multiple partners, because it influences commitment (if we expect to lose assets due to the collaboration, then we reduce commitment) and intimacy (ownership and control involve information, so that if we expect to lose ownership or control we will attempt to reduce information flows).

Uncertainty risk is the risk borne by a partner committing itself before another commits itself. A high level of commitment from each partner in a project will make it easier for everyone to deal with this type of risk, and such commitment can only be driven by mutual trust, which in turn can be generated by an expectation of mutual benefit.

Control risk arises when responsibility is given to someone for decisions, which depend upon earlier decisions over which that person has no control. This type of risk is often generated within collaborative projects due to unknown bad effects on various partners of a previous decision made by another partner. Such negative impacts of decisions made by one partner on the others are often unintended, and these can be minimised by employing various project coordination mechanisms such as vertical authorisation and horizontal deals. These will be explained in more detail in relation to specific instances within the case study.

Internal incompatibility risk is the risk of generating incompatibilities within business processes when they are redesigned or changed radically. Such incompatibilities within business processes could be generated due to technical reasons (such as incompatibilities between old and existing information systems) or due to organisational reasons (such as cultural differences between participants).

External incompatibility risk is the risk of generating incompatibilities between business processes when redesign takes place. Incompatibilities between business processes and between new and existing information systems may also be generated due to technical or organisational reasons.

SETTING THE STAGE

The context for this research is a major healthcare project at the CMT NHS Trust1 (henceforth referred to as either CMT or the Trust), an acute hospital in the UK National Health Service (NHS)