

take significant time from the end-user's daily tasks and occasionally duplicate software applications already in use elsewhere in the organisation.

As part of the research some underlying issues will be identified. The main concentration will be on determining who the end users are in the organisation, what they do as part of the daily roles and what training, if any, they have been subjected to in order to enhance their end-user computing and end-user development skills.

It is important to note that all of this can be investigated but, as identified clearly by Cotterman and Kumar (1989), it is an essential part of any study into EUC that the users be clearly defined. To this end a thorough investigation of the Cotterman and Kumar model in terms of today's technology and user skill must be undertaken.

Many researchers have briefly looked at the strategies required to improve the end-user development of applications but to this point no researcher has investigated the implementation of these strategies and their impact on the individual and the organisation. The answer to this question will not only identify who the end-user developers are in the case organisations but also the tasks they are undertaking and the applications they are developing. By identifying issues such as cultural background and end-user environment it is expected that the researcher will develop an identification model to assist in the early detection of end-user developers giving direct line managers the capacity to implement management strategies more effectively.

#### TYPE OF STUDY

This study will be undertaken using an exploratory approach to investigate the questions posed by utilising a case study format. Qualitative research techniques of interview and focus group will be utilised in conjunction with an initial questionnaire to determine demographic and end-user classification information. The results of the qualitative and quantitative methods used will be analysed through an interpretive viewpoint. Interpretivism is 'concerned with approaches to the understanding of reality and asserting that all such knowledge is necessarily a social construction and thus subjective' (Walsham, 1993, p5). The interpretive approach can potentially 'produce deep insights into information systems phenomena' as it assists researchers in understanding 'human thought and action in social and organizational contexts' (Klein & Myers, 1999, p67).

Walsham (1993, p4-5) stated that interpretive methods of research are 'aimed at producing an understanding of the *context* of the information system, and the *process* whereby the information system influences and is influenced by its context'. The major criteria for being a case organisation in this study are that end-user application development happens to some extent within the organisation by at least two employees and that these employees report to a direct line manager. To analyse the impact of this development the most obvious approach will be to

investigate the *process* of the application development within the *context* of both the organisation and the end-user developer.

Brancheau and Brown (1993, p472) identified case studies would play an important part in the future research into EUC stating 'they are uniquely suited to open-ended, detailed investigation of EUC phenomena'. The case study approach has been identified as being one of the most appropriate methods for conducting Information Systems empirical research in the tradition of interpretation and generally involves the use of more than one case study in order to allow for comparison (Walsham, 1993). This approach will allow the researcher to investigate the impacts of end-user developed applications on the organisation by interviewing the users and their direct managers and thus developing a case based view of different organisations.

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# “...Some People Achieve Greatness...”: A Study Correlating Early Vocational Behaviour with Ultimate Vocational Achievement

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#### EXECUTIVE SUMMARY

Discovering the right people for the job, any job, is a complex, frustrating and often fruitless activity. In recruiting graduates, employers are not simply looking for someone to do a job, they are more likely seeking to take on candidates

who have the potential to rise to the highest ranks within organisations. They are seeking those candidates who, a decade hence, will be seen as high-achievers, but identifying such potential in fresh graduates has proven to be elusive. While the decision support role of Information Systems should be considerable

within this domain, in fact an IS framework founded on actual vocational data is entirely lacking.

The crux of this research is to generate and analyse that data in order to determine whether known high-achieving employees exhibited signature behaviour when they were raw recruits almost a decade earlier. It is proposed that the results from this research be used as enabling knowledge for the development of sophisticated assessment simulation Information Systems, whereby signature behaviour may be potentially stimulated and evaluated. In particular the research seeks to establish:

1. Can future vocational outcomes be accurately predicted by initial vocational behaviour?
2. How does initial vocational behaviour relate to an individual's ultimate potential?
3. How may an understanding of vocational behaviour be integrated into a design framework for predictive assessment Information Systems?

If successful, the outcomes of this PhD project could provide a model upon which future candidate assessment information systems are predicated.

**BACKGROUND**

In his 1979 book (Wolfe, 1979) describing America's National Aeronautical and Space Administration's (NASA's) recruitment process to find the early astronauts, the author is reduced to describing successful applicants as having the "right stuff". Wolfe makes it clear that a mixture of abilities, background and "correctness" were prescribed as selection criteria, even though this filter eliminated arguably the finest test pilot of the day, Chuck Yeager. In the absence of more definitive data, this vague and overarching evaluation adjective "right-stuff" is still used today to retrospectively describe individuals who rise to become high-potential industry achievers.

In an attempt to specify their ideal graduate profiles to either recruitment agencies or internal human resource departments, corporate directors and managers often bemoan the time, complexity, obtuseness, cost and effective failure of the entire recruitment process. When pressed, they say "I know this is important for us, that's why I put the time in. But I really just want them to find me another two grads like him." As they say this they will often point through frosted glass to a bright-eyed staff member whom they employed the previous year and who has proven to be everything they expected of a new graduate, in fact a "golden employee".

Is it possible to predict such high-potential employees at a very early stage? Would such candidates exhibit particular key behaviour if placed in a work-based scenario, such that an accurate prediction of their vocational potential could be made? In part, the research goal of this project aims to answer the question, does such signature behaviour exist?

**METHODOLOGY**

A quantitative approach was determined to be most appropriate for this research, data mining and statistical techniques were utilised to generate and assess correlations between variables in the data. The instrument designed to generate and gather the data is briefly outlined here.

Earlier valuable research in this area has been based upon retrospective survey data using content and factor analysis e.g. (Lombardo & Eichinger, 2000) in an effort to verify a "hunch" that a particular factor was key signature behaviour (in the case of Lombardo & Eichinger the postulated key behaviour was post-appointment learning ability).

For reasons of real-world validation and because this research will bootstrap and is key to proposed further work on simulator development, the author of this research sought to determine if actual vocational data could be accessed and if so, what would be its optimum form and how could the data be obtained. Several assumptions guided the course of actions culminating in the data gathering instrument.

**Assumption 1:** Signature behaviour may be observed over a relatively short period of time due to an individual's particular reaction to a particular set of vocational circumstances. This assumption led to the conclusion that, if an average "golden employee" takes 6 to 10 years to establish ultimate vocational

success within a large New Zealand company (this condition based on anecdotal evidence), then vocational behaviour data collected over a 3 – 4 month period should prove sufficient to generate evidence of signature behaviour.

**Assumption 2:** That signature behaviour is more likely to be observed within data of relatively fine granularity. It is simply more plausible that the greater the number of recorded time periods in a single working day the more accurate will be the picture of individual behaviours rather than a set of behaviours all classified together under a daily collective code.

**Assumption 3:** That an employer of substance would be required for this research project, one which annually employed a significant number of graduates and which could be easily and logically subdivided into hierarchically organised departments.

**Assumption 4:** That the data collected would be of a highly sensitive nature both internally and commercially and that simply approaching a company and asking to see their employees timesheets records for the past 3 months would not be a reasonable course of action. This assumption led to the formulation of an 8 year association with one of the leading accounting practices in New Zealand and the design and development of a nationwide practice management system.

**Assumption 5:** That in order for the data to be valid it would need to be verified as correct, internal to the employers organisation. This assumption led to a major increase in scope of the practice management system and to the decision that customer billing data would be generated from the employee behaviour data.

**Assumption 6:** That, despite the passage of 8 years, the employer would remain willing and able to provide data on the vocational progress of the employees involved in the study. Happily, this assumption proved correct despite a significant change in personnel. This final batch of data was collected in 2006.

**STAGE OF THE RESEARCH**

The author is two years into a part-time PhD research program. To date it has been a voyage of discovery in an attempt to narrow the conceptual scope and discover the true focus of the project. Initially, a deconstructionist model was adopted, which asked why a particular human being behaved in a particular way. It was felt that if the behaviour of hi-potential candidates/employees could be accurately analysed in this way the knowledge learnt could be applied to compare prospective employees. There is a great deal of literature which adopts this deconstructionist approach to analyse an individual's behaviour particularly in terms of facets of personality. Conceptually, the research model for this project is shown in figure 1, with each contributing body of knowledge appearing as a node, providing input to the central trunk.

As the work has progressed, so the nodes have increased in number until, during a recent re-evaluation a further significant factor was identified as being absent from the study and "fitted" to the original model. This produced the concept model shown in figure 2, which bought into question the validity of the original concept.

Figure 1

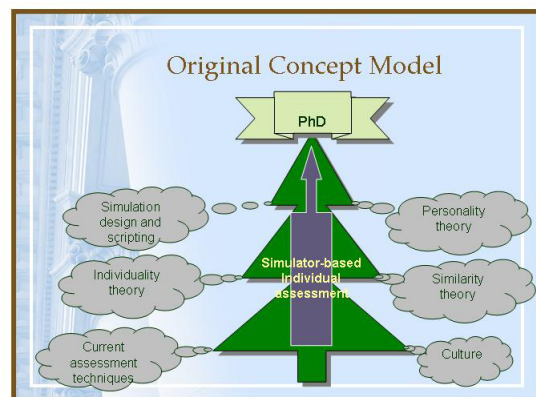


Figure 2

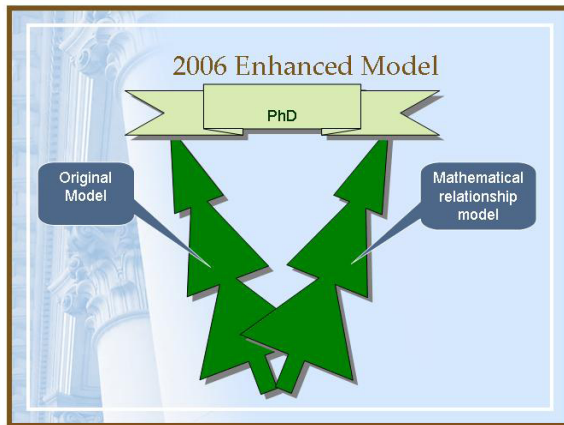
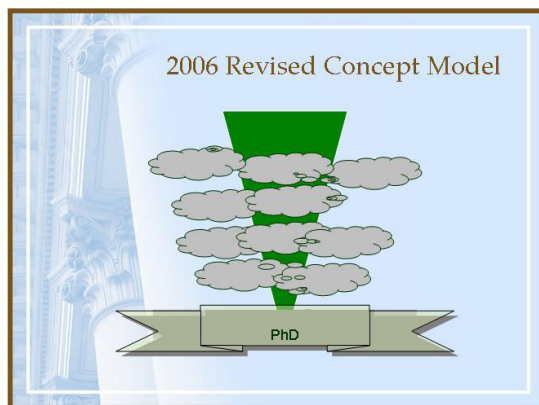


Figure 3



It was felt that this model lacked elegance, clarity and a discernable timetable for completion, indeed feedback from academic advisors declared this concept to contain not one but ten PhDs. A rethink was in order and by re-examining the contributing nodes and loosely applying input/output relationships to them a new concept model was developed, as shown in figure 3.

This model placed the PhD study not at the top but at the bottom, examining the node representing the enabling body of knowledge upon which all other aspects of the initial project were predicated. The research problem at the heart of this project and covered by this bottom-line node of knowledge considers whether, in a group of employees, vocational behaviour at the start of their careers can be correlated with their vocational achievement over a prolonged period of time.

The bibliography generated is included below for reference; the data has been gathered and is awaiting analysis via data-mining and statistical techniques. The current timeline sets completion of the PhD study to June/July 2008.

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# Requirements Engineering Framework for Information Utility Infrastructure for Rural e-Healthcare Service Provisioning

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## ABSTRACT

*The accessibility to important healthcare resources and the costs of healthcare services are serious challenges facing the rural communities of most developing countries. In order to address these problems, we are pursuing rigorous experimental investigations for the development of an information utility infrastructure, which takes advantages of emerging Utility Grid Computing (UGC) and Body Area Network (BAN) for ubiquitous e-Healthcare service provisioning. In this paper, we derive the system requirements from enterprise models and delineate the general framework guiding the development of the infrastructure.*

**Keywords:** Healthcare Management, Body Area Network, Grid Computing, Enterprise Model

## 1. INTRODUCTION

Most rural communities in developing countries are facing debilitating situations regarding accessibility to quality healthcare services. There is high demand for increased accessibility to important healthcare resources, increased efficiency and quality-oriented healthcare services with limited financial resources. Rural communities are characterized by prevailing issues such as low health level, low literacy level, limited resources and professional isolation.

In a modern information society, patient care increasingly requires healthcare practitioners to access accurate and complete health information so as to effectively manage the safe and efficient delivery of complex and knowledge intensive healthcare. There is also the need to share this information within and between care teams. On the other hand, patients require access to their own health information in

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