Do IT Professionals Think Differently?

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INTRODUCTION

Data and information are among an organization's most valuable assets (Klein 1998, Shanks & Darke 1998). Quality comprises not only the safety and availability of the organization's data, but also the reliability and the accuracy of the information (Huang, Lee & Wang 1999, Madnick, Wang & Zhang 2002). There is much evidence to show that information quality problems are common in real world practice (Huang et al 1999, Redman 1998). There are research focus on what skills are important in making sure data quality (Chung, Fisher &Wang 2002) and how to assess the quality of data (Pipino, Lee & Wang 2002). The aim of this paper is to examine whether the IT professional in various organizations have different focus in data quality.

The paper considers three Australian case large organizations. The cases are a federal government department, a government funded research institution that have many divisions across Australia, and a higher educational institution. Table 1 provides an overview of the three case organisations. It includes a description for each organisation which includes the number of employees, the annual revenue, total assets, and the number of accounting information systems staff.

THE INTERVIEWS

Representatives from five stakeholder groups were interviewed from each organization two groups from IT professionals and three groups from various management levels. Table 2 summarises the case study respondents who were the different stakeholder groups interviewed in the three cases. The table gives details of participants, their posi-

tions/ work roles, their organisations, and the stakeholder group they belong to. It shows also the number of officers interviewed.

A set of twenty success important factors (Xu & Al-Hakim, 2002) was derived. Systematic analysis was then employed to determine the categories to which those factors belong. The study derives these factors from three sets of sources: data characteristics factors; industry factors and organizational factors. The first includes the nature of information system and data quality policies and standards. The second set comprises stakeholder related factors. The third set covers organization culture, performance evaluation and team work as shown in Table 3.

CASE A

Both IT and business professionals consider the commitment of top management is extremely important while the nature of the accounting information system is considered unimportant factor for the data quality. However, it was found that IT professionals were more concerned about systems and technical issues. They seemed to have confidence about the newer technology, and have greater trust in the systems' abilities to produce high quality information. Even when they were considering organisational issues, they still related those issues to the systems. IT professionals seemed to be more systems-orientated.

On the other hand, business professionals were more concerned about the human related factors' impact on information quality, such as communications and staff turnover. Even when they were talking about systems issues, their focus was still from the human perspective, rather than the technological perspective. They believed that people's understanding of systems would impact on the quality of the information which systems produced.

IT Professionals believe that the usage and the usefulness of the information have an impact on the information quality. The IT manager noted:

One of the problems is it isn't fully used, and hopefully it should improve the quality of your data after you re-use its code. But on the other hand, you have a system that is being used by a lot of people, and therefore, all the bugs should have been found in it.

The IT manager emphasised that *human errors* had much more impact on accounting information quality than *system failure*.

Table 1. Overview of Case Organisations

Description		Number of employees	Annual revenue ($'000)	Total assets ($'000)	Number of AIS staff
A	Federal Government department	2,500	16,000	300,000	100
B	Government funded research institution	6,400	800,000	1,300,000	300
C	Higher educational institution	1,200	98,000	139,000	50

Table 2. Summary of Case Study Interviews.

Profession	Stakeholder	Organizations		
		A	B	D
IT Professionals	Information custodians	IT manager	IT manager	IT manager
	Data / database managers	Data manager and Data Administrator (DA)	Database Administrator (DBA)	DA
Business Professionals	Information producers	Financial system manager	System accountant manager	Accountant and Payroll Officer
	Information consumers	Business Senior manager	Senior manager	Two Section Managers
	Internal auditors	Internal auditor	Internal auditor	Internal auditor
Number of Interviewees		6	5	7

Table 3. Classification of the Success Factors

Category	IS / DQ Characteristics	Stakeholders' Related Factors	Organisational Factors
Factors	Nature of the IS	Top management's commitment	Training
	DQ policies & standards	User focus	Org structure & culture
	DQ controls & approaches	Employee relations	Performance evaluation & rewards
	Role of DQ and DQ manager	Information supplier quality management	Manage change
	Internal control	Audit and reviews	Evaluate cost/benefit tradeoffs
	Input control		Teamwork (communication)
	Understanding of the systems and DQ		
	Continuous improvement		

From one area, a lot of data quality is affected by how accurately the information is entered into the system by business users of system. Well, the systems get more complex. However, a well designed system, old or new, should be able to accommodate.

Communication within the organisation was perceived by business professionals to be an issue that might cause data quality problems. The Senior Manager of the organisation stated:

I think when you find things aren't going well in an organisation; it always comes back to the same problem. It is communication. Everybody complains of not knowing what is going on, not being told the right things.

However, it appears that the nature of some people, as they were reluctant to disclose information that they had. As the information producer stated:

Well, that is the case. If you know something that someone else doesn't, then you are in a stronger position.

CASE B

While IT people thought systems controls were more important, accounting professionals thought differently. Accountants tended to believe that human process controls were more important than system controls. They believed that human related factors had much more influence on accounting information quality. They argued that although IT people could build in many controls into systems, at the end of the day it still relied on people to enforce those rules and controls. Furthermore, there were some human related factors that the computer could not control.

From the viewpoint of business professionals, Case B had issues of under-reasoning for education and training because, as stated by the System Accountant Manager; *"it is not just how to use the system, but you need to incorporate policies and procedures and best practices".*

However, the IT manager believed that organisations have to implement new systems because technology had changed and so had business needs. He stated:

At the moment we are actually doing a review, talking to all of our finance people in our divisions. It is a business needs review to see if the system we have now is meeting our requirements. So we will either decide whether to stay with it or to change to something else.

The answer of Case B Internal Editor was that:

If there is change, I guess everyone has to be on board with the change, or at least know what their responsibilities are and what they need to do. So things need to be well-planned and well-documented, so that if we just suddenly change everything and there hasn't been enough thought about what procedures need to change, it will cause serous problems.

CASE C

The analysis of Case C reveals that there is consistency in the viewpoints of IT professionals. Unlike other cases, IT professionals tended to have the same viewpoints of the business professionals in regard to internal control and continuous improvement and team work and communications. Top management was regarded as one of most important critical factor by both IT and business professional. This is consistent with the findings of cases A and B.

CONCLUSION

The two main conclusions regarding the IT professional perceptions are:
1. There is a great emphasis on the 'input control' and the 'nature of the

Table 4. *Stakeholders Rating of the Importance of the Factors (Case C)*

Category	Factors	Stakeholders					Mean
		Info producer	Info custodian	Info user	DBA	Auditor	
AIS characteristics	Nature of the AIS	7	9	5	7	5	6.6
DQ characteristics	DQ policies & standards	9	9	9.5	2	8	7.5
	DQ controls & approaches	7	9	8	9	8	8.2
	DQ vision	10	8	5	6	6	7
	Internal control	9	10	10	3	9	8.2
	Input control	9	9	9	9	8	8.8
	Understanding of the systems and DQ	8	9	9	9	8	8.6
	Continuous improvement	6	9	9	7	7	7.6
Stakeholders' related factors	Top management's commitment	8	9	9	8	9	8.6
	DQ manager	3	?	?	7	?	5
	User focus	7	8.5	8	8	1	6.5
	Employee relations	7	10	9	8	7	8.2
	Information supplier quality management	10	7	9.5	8	5	7.9
	Audit and reviews	6	9.5	9	3	6	6.7
Organisational factors	Training	9	10	9.5	9	9	9.3
	Org structure	5	7	8	4	6	6
	Org culture				8		8
	Performance evaluation & rewards	10	7	8	5	5	7
	Manage change	10	10	9	8	7	8.8
	Evaluate cost/benefit tradeoffs	10	6	9	7	6	7.6
	Teamwork (communication)	10	10	9	8	6	8.6
Overall		8	8.55	8.33	6.63	6.55	7.54

Legend: 1, 2, 3 … = Rating of the importance {1 as not important at all, 10 as extremely important}
   ?   = The stakeholder wasn't sure / clear about the factor
   Blank = the stakeholder did not rate the factor or the factor wasn't included

IS' by the IT professional. IT professional's perception about the importance of 'internal control' is relatively low. Business professionals tended to believe that human related factors have much more influence on the quality of IS.
2. 'Team work' and 'personnel competency' are other factors that did not rated very high by the IT professionals. However, the respondents' perception in regard to the effect of 'measurement and reporting' and 'continuous improvement' for insuring the data quality of "IS" is comparatively low.

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