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Multiple Viewpoints: An Initial Look at Individual Profiles

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Abstract

This paper reports on some preliminary investigations carried out in a large organisation in the financial sector of the UK. Linstone (1984) and Mitroff and Linstone (1993) have argued that sociotechnical decision-making requires input from three viewpoints. These viewpoints are present in an individual to various and varying extents. Linstone (1984) suggests that research that would enhance our ability to identify an individual's characteristic mix of perspective types would "be most helpful". To this end, Linstone offers a "test" with which to develop this profile.

The original test made statements about hydraulic engineering projects in the USA. The test was rewritten to make the statements in the test relevant to information systems development professionals, the potential respondents and the study of which this forms a part. The results suggest that there are difficulties with this approach.

Introduction

Linstone (1984), Mitroff and Linstone (1993) argue that sociotechnical systems can only be fully perceived through the use of three viewpoints - T (technical); O (organisational) and P (personal). In this way, the functionalist reliance on T alone, is ameliorated. Each viewpoint allows different insights that complement each other.

Following Mitroff and Linstone (1993) we can characterise the generic viewpoints that individuals in an organisation might have, as follows:

Technical - The world is seen in quantitative terms. Such a viewpoint rates terms such as - rationality or analysis very highly. Statistics and polls are a constant delight. Anything that involves using a computer or being scientific or applying science is 'good'.

Organisational - Will a new policy threaten your organisation's rights, standing or stability? How can conflicts between sub-units be turned to constructive use? Rules and procedures are there to be followed so that there are no violent changes to the organisation. From this viewpoint you are interested in creating and sustaining the organisation's culture and myths. This might represent or be seen as a characterisation of the organisation's politics.

Personal - This perspective is the most difficult to define. In essence it includes attitudes and behaviour, which cannot be incorporated in the previous two viewpoints. It includes things like intuition, charisma, leadership and self-interest. Briefly, if

making a decision, the guiding principle behind the answer will change with perspective. Hence, the T viewpoint seeks objectivity; O seeks the best for the organisation and P seeks the best for the individual.

Most individuals seem to be represented by a mixture of these perspectives. Usually, a person will reflect all three viewpoints in an individual way. In particular, for example, it might be expected that a theoretical scientist would show a dominant T perspective; or an "organisation man", a dominant O perspective. Linstone (1984) "postulate[s] that a qualitative discussion of an individual's personal balance or bias in perspective types can be meaningful and useful". He supports this by considering the impact of the viewpoints on identifying an individual's impact in a team. Although any one individual, in a given context, will have a bias towards a particular perspective, Linstone concluded that "the choice of a well-balanced team will always remain an uneasy question of experience and judgement". The perspectives bring with them differing time horizons, which have an impact on decisions on policy. Multiple perspectives are seen to be critical in developing insight on complex sociotechnical problems. Linstone (1984) then suggests modes of communication that would be preferred by individuals with each of these perspectives dominant. Further, the perspective that is dominant in an individual is expected to mutate over time, as they rise in the hierarchy. Also, the O perspective of, say, top-level managers will itself change significantly with experience. Finally, Linstone (1984) considers the implications for an executive making a difficult sociotechnical decision and receiving advice from various quarters, with differing perspectives. He argues for the advice from the three perspectives to be integrated and that effective managers are doing this.

The aim of this research has been to use perceptions of software quality as a vehicle for ascertaining the value of these theories in practice. The research took the form of a case study. This paper reports on the responses to a "test" issued as part of this study. Only a small number of tests were issued, so the results are only tentative. Thirteen responses were received for this questionnaire, which represents a 54% rate of return, approximately. In the following text, an alphabetic character identifies the respondents. These responses have now been analysed and this analysis forms the rationale for this report.

The aim was to explore the reality and usefulness of Linstone's (1984) assertion that the multiple viewpoint technique could be used to identify an individual's approach to a given subject area by developing a profile from an appropriate set of questions. The questions that the research wanted to answer were "How should the profile be developed?"; "How real is it?" and "Is it useful?".

Analysis

The test was developed from an exemplar presented by Linstone (1984). This consists of thirty statements, each of which is said to have a specific viewpoint associated with it. The exemplar focused on hydraulic engineering projects in the United States of America. Initially, each statement in Linstone's original was recast in the context of software quality assurance. Sometimes this was not possible, in which case an alternative statement was developed. In practice, there were a few extra statements in this study (34 rather than 30). The aim was to make each statement reflect only one viewpoint. As an example, statement 23 of the exempler was "Hydropower is a clean, renewable, tested and underutilized source of power. Nuclear power is dirty, expensive and feared.". In contrast, statement 23 of this study was "The dependence of your organisation on third-party software will be reduced as the quality of in-house software increases". Unfortunately, subsequent piloting indicated that the creation of a sentence with an impact on only one viewpoint, happened very rarely. The piloting team consisted of academic colleagues teaching software development who had had Real World program development experience. Table 1 summarises the interpretations of the piloting team of the viewpoints exhibited by each of the statements. Linstone (1984) proffered single viewpoints for each of his statements. For example, statement 23 (above) is P. However, in Table 1, this was not always possible. Given the small sample, it was not always clear which viewpoint would prevail. Consequently, the right hand column of the Table is headed "consensus?". Where consensus was not found, a best approximation of more than one perspective was inserted.

Linstone (1984) originally asked respondents to identify and rank in importance, their ten most critical statements. This was felt to be too onerous. Indeed, the reduction in this research, of the number of items to be ranked from ten to seven (based on Miller's (1956) recognition of seven plus or minus two as being the limit of the number of things we can remember at one time) was still felt difficult by the respondents. The end result of this hard work was to be the viewpoints represented by the chosen statements in rank order. This string was held to represent and describe the respondents' current way of thinking. It was recognised that this may well change over time, as indeed a Jungian personality analysis would probably give different results over time.

Unfortunately, Linstone (1984) did not elaborate on how to interpret the data received. As can be seen from Table 1, it was not unusual for perceptions of two viewpoints to show approximately equal dominance. In one case, it was not possible to be sure which of the three viewpoints was dominant. Despite the ambiguity of this piloting, the analysis of practitioners' profiles was continued and is summarised in Table 2. This was done using the erstwhile "consensus view" of the piloting team given in Table 1.

Table 1. Viewpoint Profile Piloting

Qu.	T=	O=	P=	Consensus?
1	6	1		T
2	3	4		O/T
3		7		O
4	1	5	1	O?
5			7	P
6	6		1	T
7		4	3	O/P
8	6	1		T
9		4.5	2.5	O
10		1.5	5.5	P
11	4	1	2	O/T/P
12		2.5	4.5	P
13	7			T
14		7		O
15	1	5.5	0.5	O
16		3.5	3.5	O/P
17		1	6	P
18	2	5		O
19	4	2	1	T?
20	1.5	4.5		O
21	0.5	2	4.5	P
22		1	6	P
23	2	3.5	1	O/T?
24	6.5	0.5		T
25		0.5	6.5	P
26		5.5	1.5	O
27	3	3	1	O/T
28	5.5	1.5		T
29	6.5	0.5		T
30		6	1	O
31	7			T
32	1.5	0.5	5	P
33			7	P
34	2	5		O

Table 2. Viewpoint Profiles Summary

	Org'n Status	Raw Viewpoint Profile
A	SM (2)	O/P, O, O, T, O, P, O/T
B	S (6)	T?, O, T, O/P, P, O, O
C	S (4)	O, T, T, O, T, O/T/P, O
D	M (3)	O, T?, O/P, T, O/P, O, O
E	SS (4)	O/P, T, T, T?, O, P, T
F	SM (5)	P, O, T?, O/T, O, P, O
G	SS (5)	O/T, O/P, P, T, O
H	SS (5)	T, O/P, T?, T, O, T, O/T
I	SS (4)	O/T/P, O, O/P, T?, T, O
J	SS (1)	O/P, O, O, P, P, P, O
K	SM (2)	O/T/P, O, O/P, T, T, T, T
L	SS (1)	O/P, T?, P, T, T, O, O/T/P
M	SS (5)	O, O/P, P, O/T/P, P, O, O

Key: SM - 'senior' manager; M - Manager;
SS - 'senior' staff; S - staff;
(number) - years in current job

Conclusions

It was anticipated that respondents' profiles would reflect their attitudes to their work environment. This may be the case. It would be anticipated that managers would be likely to show attitudes that would reflect the organisational and personal viewpoints rather more than the technical viewpoint. There is certainly nothing in this sample to suggest a counter-example. All respondents showed an awareness of non-technical viewpoints, but they nearly all had many years of experience both as practitioners in other positions and in their current positions. Conversely, developers might be expected to show a preference for the technical. This would seem to be the case, but there was, unfortunately, only one developer in the sample (H).

The study reported here is very small but it does indicate some potential problem areas. The key points arising are:

- There is no single way of interpreting a statement or question. Consequently, there would seem to be an issue with the theory, as this would appear to assume that there was only one interpretation. If this was not the case, it is difficult to see how a profile of ranked viewpoints could have any meaning. On the other hand, the indivi-dual performing this analysis could use their perceptions as the base point. However, this would simply produce profiles, which were relative to the analyst's profile rather than an assumed absolute base.

- It is not easy to distinguish the significance of the differences between any two profiles.

References

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