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MEASURING RESISTANCE TO CHANGE: AN
INSTRUMENT AND ITS APPLICATION

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ABSTRACT

Much research has been undertaken with the assumption that resistance adversely affects a change process. Strategies devised from this perspective often approach resistance adversarially, attempting to circumvent or negate its impact. However, recent research has identified that despite this predominantly negative perception, resistance has also been used to successfully implement many changes in organizations.

This paper highlights the need to identify and measure resistance prior to an organizational change effort. Resistance by nature is complex, and its potential to negatively impact change is greatly exacerbated by managers applying a simple set of assumptions when encountering it (Kotter and Schlesinger 1979). By accurately gauging resistance in advance, implementers of change can anticipate the likely response of the organization and thus implement appropriate strategies.

To this end, an instrument has been designed that identifies and measures resistance in an organization. The instrument is utilized in a manufacturing organization and the results show that it provides a valid and reliable measure of resistance and is able to accurately identify the likely nature of resistance generally, as well as individual pockets that belie a peculiar stance not indicative of the organization as a whole.

KEYWORDS

Resistance, Measurement, Change Management, Manufacturing, Australia.

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INTRODUCTION

Resistance is a familiar problem in organizations, especially during a change process. Research undertaken by Maurer (1996:56) suggests that up to two-thirds of corporate change efforts fail and resistance is the 'little-recognized but critically important contributor' to that failure.

Previous research that investigated the perceptions held by practitioners of resistance found that it was overwhelmingly treated as the adversary of change; a problem that 'needs to be nullified before the real work begins' (Waddell 1995). This simple set of assumptions is echoed by certain aspects of management literature that describes resistance as solely the product of single facet phenomena, for example 'fear of the unknown', 'job insecurity', or 'lack of information'. Employees, however, provide a more urgent and desperate picture; resistance can be a frequent or continuous experience, linked with a lack of support and communication, and as a consequence, leading to negative responses (Waddell 1995). It is apparent therefore, that resistance can not be neatly categorized nor perceived simplistically (Kotter and Schlesinger (1979). Rather, our understanding of resistance must be sophisticated such that strategies for change can incorporate its multifaceted nature.

The need to be able to correctly measure and identify the nature of resistance is therefore paramount. Resistance may be the single greatest factor that can influence both the success and failure of a change effort; thus its understanding and anticipation are vital. However, given the complicated nature of resistance, there are many limitations to its measurement. For example, in using direct questions on resistance there is the possibility that the researcher is concentrating on complaints which normally are more balanced by positive feelings (Schuman and Presser 1981:111). Therefore the types of questions being asked and the means by which they are processed can reinforce the preconceived notions of resistance.

There is also concern about the clarity of the term resistance. One Manufacturing Manager pointed out that "...many workers seem to use the term loosely and fail to distinguish resistance from any other situation within the workplace" (Waddell 1995). Thus a wide variety of behaviors and attitudes are often superficially labeled as manifestations of resistance in the absence of other meaningful categories. Additionally, prior research indicates that there is a tendency to deny resistance in oneself while casting others in a negative light. As an Operations Manager said: "Upper management are prepared for change but we know that the workers are not" (Waddell 1995).

Combined, these factors indicate that the measurement of resistance in organizations cannot be confined to direct questions, because the potential for emphasis bias is too great. Rather, some form of objective testing instrument is needed in place of or as an adjunct to asking employees what they feel.

Furthermore, the instrument must be sophisticated enough to incorporate the complexity of resistance. For example, where measurement only focuses on a single facet construct, there is no certainty that the multifaceted condition of resistance is being identified. It is clear that the experience of resistance is peculiar to the individual, thus different individuals will offer different interpretations as to their predominant sensation of resistance. These diverse conditions confirm that a test for resistance needs to incorporate a variety of items and coordinate a comprehensive range of identified facets.

The remainder of this paper is structured as follows. The next section describes the design and testing of the instrument. This is followed by a section that describes the application of the instrument in a manufacturing organization based in Melbourne, Australia. The analysis and the results obtained from the application are presented next. The papers end with the conclusions.

DESIGNING THE INSTRUMENT

An instrument was developed that measures resistance by gauging an employee's attitude to and perception of change. Our main concern was to measure the multifaceted nature of resistance and collect data from a representative sample of individuals in different environments. The method by which the instrument was developed is as follows:

Exploratory Survey: The purpose of the exploratory survey was to informally gather evidence concerning the variety of experiences with resistance in terms of different individuals. Fifteen volunteers from a post-graduate course in management taught at the Victoria University of Technology in Melbourne, Australia were asked five open-ended questions and the responses were then collated and grouped. This formed the basis for the development of the instrument to test the multifaceted nature of resistance. The five questions were:

1. "How did you feel when change was suggested/introduced?"
2. "What did you do when you were faced with this situation?"
3. "Under what circumstances have you witnessed resistance to be negative?"
4. "Under what circumstances have you witnessed resistance to be positive?"
5. "Define or describe, in your own words, resistance".

Instrument Trial 1: With the information gathered from existing literature, previous case studies (Waddell, 1995) and the exploratory study, a new description of resistance was suggested. In order to test that the new perspective was possible, an instrument was designed to test this multifaceted nature of resistance. At no time was the word 'resistance' mentioned, either verbally or in writing, as this was an emotive term and would prejudice the experiment.

Thirty-four employees from the meat industry who were participating in a meat management course at the Victoria University of Technology in Melbourne were given the instrument to complete. The instrument consisted of 60 items that had been translated into statements and measured using the Likert scale. This survey was conducted under very informal conditions and the respondent's reactions to the format of the survey were considered equally important compared to the responses. There was much constructive criticism with the result that the instrument was subsequently modified.

Instrument Trial 2: The instrument was reduced from 60 to 40 specific statements and the previous group were asked to replicate the procedure, once again in an informal and constructive manner. Although this group found this instrument to be more appealing, the facets were again reduced to twelve general categories so that it could be applied to other industries (see Table 1).

Instrument Trial 3: The students who assisted with the exploratory study were then given the new instrument to complete under a controlled situation. They were unaware of any relationship between this instrument and the exploratory survey. Also each multi-faceted item was converted into a statement and the results calculated.

Final Instrument: As each organization is unique, the final instrument was adapted to reflect the interests and capabilities of the participants. It was further recommended to make adjustments and use semantic differentials as a means of attitude-measurement rather than the Likert scale. Subsequent statistical analysis suggests that the instrument is valid and the format acceptable.

Table 1: Facets Measuring Resistance

1.	Describe your feelings about the likelihood of any change happening.								
	Apprehensive	1	2	3	4	5	6	7	Confident
2.	How do you think it will affect your workflow?								
	Disruptions	1	2	3	4	5	6	7	No Interruption
3.	How will change affect any material benefits, e.g. money, work conditions?								
	Loss	1	2	3	4	5	6	7	Gain
4.	How do you feel about your job when change is suggested?								
	Insecure	1	2	3	4	5	6	7	Secure
5.	What effect do you think change will have on any intangible benefits, e.g. influence, power, and authority?								
	Less	1	2	3	4	5	6	7	More
6.	How much workload comes with change?								
	More	1	2	3	4	5	6	7	Less
7.	How do other employees respond to the possibility of change?								
	Reject	1	2	3	4	5	6	7	Accept
8.	Do you think that change is inevitable?								
	Never	1	2	3	4	5	6	7	Always
9.	What type of personal response does the thought of change bring?								
	Anger	1	2	3	4	5	6	7	Fulfillment
10.	Generally, what is change?								
	Bad	1	2	3	4	5	6	7	Good
11.	Will it be possible to get further information about the change if you need it?								
	Difficult	1	2	3	4	5	6	7	Easy
12.	Are you apathetic about all types of change?								
	Always	1	2	3	4	5	6	7	Never

The facets of resistance examined by the final questionnaire represent a synthesis of employee attitudes and sensations that most accurately reflect resistance in an organization. Questions relating to behaviors or consequences of resistance are excluded as these were found to introduce emphasis bias that skewed the results. The twelfth question regarding apathy examines a particular case of resistance as well as providing a test that filters out responses that are not bona fide.

The instrument is constructed using a semantic differential approach which incorporates a series of attitude scales (de Vaus, 1985). This is a popular attitude-measurement technique consisting of identification of a concept, in this instance resistance, followed by a series of seven-point bipolar scales. Bipolar adjectives, such as 'good' and 'bad', anchor the beginning and end (or poles) of the scale. Respondents then makes repeated judgments of the concept on each of the scales.

Careful attention was given to the adjectives used to describe particular facets of resistance as behavioral researchers have found that respondents are often unwilling to use the extreme negative or positive ends of a scale. Therefore rather than using such adjectives as 'fear' and 'no fear' as extremes of a continuum, more acceptable words were used, for example 'apprehension' and 'confidence'. This modified version of the semantic differential is an acceptable method of measuring the meaning of resistance to an individual (de Vaus, 1985:77) and is versatile for this purpose.

In addition to the instrument's ability to measure the strength or otherwise of resistance in an organization's change effort, the instrument is also designed to determine whether this resistance is positive or negative. Positive resistance occurs where behaviors and attitudes oppose change in a manner that is useful and can be utilized by those implementing change. Negative resistance describes behaviors and attitudes that oppose change in unproductive ways. By gauging the employees understanding of change as well as the strength to which they hold these perceptions, the nature of resistance in an organization can be identified. As a result of this process, the organization would be in a far better position to successfully manage a change process. Where the attitudes and responses of employees are known in advance, change strategies can be tailored to be more appropriate. In particular, where positive resistance is likely to be encountered, it represents a form of resistance that can be utilized towards a greatly improved implementation process. However, where an organization fails to identify and measure resistance, it runs the risk of implementing change in a manner that is inappropriate and therefore likely to exacerbate problems.

APPLYING THE RESISTANCE MEASUREMENT INSTRUMENT

The instrument developed was used in one Australian organization to measure the nature of resistance existing within one of its manufacturing plants. The company and the plant participating in this study is a pump manufacturer established over 60 years ago as part of a larger group of companies. It developed a particular range of products for industrial and rural application and had a very broad customer base.

In 1985 a larger conglomerate purchased the company. Over the next five years, the business grew rapidly by acquisition of other companies in the related industry. The major plants are:

Tottenham, Victoria: In recent times all manufacturing had been shifted to this new modern site, thus allowing the organization the opportunity to improve on its previous methods and practices, reducing material handling and introducing multi-skilling into its workforce. This plant manufactures centrifugal pumps, which has been produced for over 50 years. The plant can yield 3500-4000 units per annum. It also has the capacity to assemble special purpose pump sets to meet client specifications including carrying out pump performance testing.

Kyneton, Victoria: The plant specializes in foundry work and was established in 1947. It produces castings for a variety of pump products as well as sub contract castings. The current output is approximately 850 tones per annum producing a wide range of steels, irons and non-ferrous alloys. In 1990 the Foundry installed a computerized spectrometer to allow in-house analysis of all materials cast at the Foundry. The Foundry is currently going through some dramatic changes including improving the foundry's current capacity and processing techniques as well as a major new factory layout to improve efficiency.

Ipswich, Queensland: This plant was established in 1960 to produce a range of equipment to service industrial and Government Authority pumping requirements. It also develops and produces its own series of submersible non-clog pumps. By 1987 this plant had become the leading manufacturer of submersible sewage and industrial waste pumps in Australia. Recently this plant went through a major upgrade with the introduction of cellular manufacturing and capital injection into building upgrade.

The company currently employs approximately 220 people in Australia, with 120 at the Tottenham, Victoria site, which participated in the study. This is a ratio of 2.5/1 of 'white' to 'blue' collar workers. During the 1993/94 financial year, the sales revenue amounted to approximately \$A32 million. The company has adopted a flatter hierarchical structure to breakdown the traditional management barriers that impeded on improved communication and feedback to the management team. In the past information was not filtered down, thus not allowing the staff to participate in the decision making process or allowing them to discuss their frustration openly.

One of the management objectives is to improve the Human Resource factor of the organization in improving the skill level of its staff to ensure they meet the organization's future needs. This was identified as a weakness in the organization. By building the skill level of its personnel this would help prepare the staff for the future direction that the organization is pursuing.

Overall the company continues to retain a high profile in the manufacture and supply of purpose built pump sets, which is the core of their business. It also invests in high technology equipment and systems, CNC (computer numerically controlled) machine tools, bar coding, production control systems and automated retrieval systems. In addition, the company is investing in the continuous improvement of its quality verification facilities and quality assurance systems.

A total of ninety employees, including staff from administration, senior management and the shop floor completed the survey under supervision in groups of ten at the company site. A researcher assisted in the process of administration by going through each question one at a time, and was available for inquiries regarding the study. As far as possible, instructions were identical so as to avoid inconsistencies. Participants were encouraged to quickly respond to the question as 'the first guess is the best guess', and to answer all questions by circling a number.

A common scenario designed to illicit the generic response workers have to change was created for the trial. The scenario was not specific to the organization, thus it emphasized the identification of general attitudes and feelings held by employees. One example of a scenario used read:

On the way home after work, you have stopped at the traffic lights of a major intersection. You notice a new sign at the intersection that reads, "Changes will be made over the next three weeks." Nothing else is stated; you do not know what type of change is expected. What is your immediate reaction? How do you feel instantly?

RESULTS AND DISCUSSION

Descriptive Statistics

The 90 completed questionnaires were analyzed and the mean and standard deviation calculated for the twelve facets of resistance are presented in Table 2.

Table 2 Descriptive Statistics Summary.

Facet	Negative									Positive	Std. Dev
FEAR	Uneasy	1	2	3	4	(4.61)	5	6	7	Confident	1.31
DISRUPTION	Hinder	1	2	3	4	(4.19)	5	6	7	Smooth	1.27
TANGIBLES	Loss	1	2	3	4	(4.46)	5	6	7	Profit	1.10
THREAT	Insecure	1	2	3	4	(4.72)	5	6	7	Secure	1.45
INTANGIBLES	Reduced	1	2	3	4	(4.00)	5	6	7	Increased	1.25
WORKLOAD	Increase	1	2	3	(3.01)	4	5	6	7	Decrease	1.28
CULTURE	Reject	1	2	3	(3.01)	4	5	6	7	Accept	1.18
CERTAINTY	Never	1	2	3	4	5	(5.57)	6	7	Always	1.53
PERSONAL	Anger	1	2	3	4	(4.43)	5	6	7	Fulfillment	1.46
CHANGE	Bad	1	2	3	4	5	(5.36)	6	7	Good	1.31
COMMUNTION	Difficult	1	2	3	4	(4.56)	5	6	7	Easy	1.57
APATHY	Non	1	2	3	4	5	(5.0)	6	7	Challenged *	1.51
	Caring										

* Indicates that the scales were reversed to test for sincere responses.

Out of the 90 respondents, only 17 used both ends of the semantic differential to identify their feelings, i.e. '1' and/or '7'. This confirms the suspicion that participants are reticent to use extreme responses to the statements. Hence the responses are predominantly between the ranges of '2' to '6'.

Also, of the 90 responses, only four indicated a definite apathy to change, that is, for all questions except the last they circled number 4 (in the middle). For the last question these four respondents indicated that they 'never care about change'. Therefore the middle response for the other 86 cases is a genuine position and the four cases were excluded from most of the analysis from this point on. But before excluding the four cases, the twelve facets were cross-tabulated against whether or not a person scored a '6' or '7' on APATHY. There did not appear to be anything distinguishing about those four respondents, except perhaps their blandness. It confirmed the advantage to have an APATHY category.

In order to gain a clear distinctive numerical value for each facet, the usage proxy value technique was applied:

$$\text{Usage Proxy Variable} = \frac{\text{Total numerical value of each question} \times 100}{\text{Likert Scale (7)} \times \text{Number of Respondents (86)}}$$

Table 3 is a summary of what the respondents are describing, based on the proxy variable score. The facets are arranged in descending order of positively.

Table 3: Proxy Variable Results for Facets of Resistance

<i>FACET</i>	<i>QUESTION</i>	<i>NUMERICAL VALUE</i>
	<u>POSITIVE</u>	
1. CERTAINTY	"Change is definitely certain to happen"	79.1
2. GOOD/BAD	"Change is definitely good"	76.2
3. THREAT	"I feel a little secure about change and my job"	67.1
4. FEAR	"I am a little confident about change"	65.4
5. COMMUNICATION	"Further information is reasonably easy to obtain"	64.4
6. TANGIBLES	"I am unsure as to whether I will lose or gain tangible benefits from change"	63.3
7. PERSONAL SATISFACTION	"I am unsure as to whether change makes me fulfilled or angry"	61.9
8. DISRUPTION	"I am unsure as to whether change will disrupt or smooth my workflow"	59.4
9. INTANGIBLES	"I am unsure as to whether I will lose or gain intangible benefits from change"	56.3
	<u>NEGATIVE</u>	
10. WORKLOAD	"Change means more work"	41.9
11. CULTURE	"Other employees reject change"	41.7
<p><i>A proxy variable of 100 indicates that all respondents are ALWAYS positive about that particular facet whereas 0 indicates that respondents are NEVER positive about that facet.</i></p> <p><i>Note: The facet of APATHY was excluded as it indicates a NO RESPONSE or NON PARTICIPATION on the part of the respondent</i></p>		

The proxy variable broadens the spectrum of results so that it is visually more recognizable. By referring to Tables 2 and 3, it can be concluded that there is a predominantly positive attitude towards change within this organization. Thus, it would still be expected that employees would exhibit resistant behaviors and actions in the event of a change, however this resistance would be of a positive nature and potentially useful to the company.

On the part of the respondents, they accept that change is inevitable and that in most cases they expect change to be good. With these as predominant facets, the organization has a proactive and anticipative employee workforce and the demands then fall upon management to fulfill those expectations. Such an environment is conducive to successful change and should be fully utilized.

The result for CULTURE is particularly interesting. While respondents appear to be generally positive when describing their own attitudes to change, when asked about their peers they become very negative. This could be interpreted in any of three ways:

- a) There just happens to be a positive few in the group (which is unlikely);
- b) the respondents were embarrassed, fearful or otherwise reluctant to admit to negative aspects of resistance; and/or
- c) workers tend to keep pro-change sentiments to themselves.

Evidence emerges later that suggests that option (c) above is the most likely as the research design and sampling method were in fact valid. However, at this stage, all that can be concluded is that if the organization was considering major change in the near future, it would be suggested that they address this negativity (including the negative view of WORKLOAD). For example, by emphasizing the commonality of views about the certainty and nature of change, it would publicly recognize that change is advantageous to all and that everyone thinks the same.

Statistical Significance

It appears that the sample has responded quite positively about change but it needs to be confirmed that it is not due to random sampling error. Hence a Univariate Hypothesis Test is used to ensure that results gained are statistically significant. In this instance, the hypothesis test requires that the mean of the sample be greater than the mid-point (38.5). The analysis derived a Computed Test Statistic (CTS) of 10.7, which is greater than the required CTS of .645. Thus the Null Hypothesis can be rejected; i.e., there is statistically significant evidence that a generally positive attitude to change exists in the company.

Bivariate & Multivariate Analysis

Correlation and Factor analysis were used to examine the data. The results did not contribute a great deal of information pertaining directly to the organization, although they did provide some useful information about the questionnaire itself (discussed later).

A new variable called SCORE was created which represents the sum of combined responses for all variables apart from APATHY. The frequency and distribution of the variable are presented in Table 4 and Figure 1. The results are skewed towards positive attitudes to change with the mean being greater than the mid-point. There also appears to be a small group that is extremely opposed to change, with 2.3% of responses falling below a score of 22. In general, the results indicate that the majority of respondents are positive towards change.

Correlation and Cross-tabulations were run to identify relationships between the facets and the SCORE variable. Both methods found numerous similar relationships, and these were ranked to discover which ones were more important. Final rankings were developed by converting the ranking key (correlation score in the correlation matrix, Mantel-Haenszel score in the cross-tabulations) into a percentage of the top score where the two percentages for each facet were averaged. While the results can not be considered statistical fact (certain cross tabulations were not able to comply with the restriction that there be at least five expected cases in at least 20% of cells), they do present a strong suggestion of prevalent attitudes at the organization (see Table 5).

Table 4: Frequency of SCORE variable

SCORE Sum of all except APATHY					
	<u>Value</u>	<u>Frequency</u>	<u>Valid %</u>	<u>Cum %</u>	
1st	(0-17)	(0)	(0.0)	(0.0)	
Quartile	18	1	1.2	1.2	
	21	1	1.2	2.3	
	29	1	1.2	3.5	
	30	1	1.2	4.7	
2nd	35	3	3.5	8.1	
Quartile	37	2	2.3	10.5	
	39	2	2.3	12.8	
	40	3	3.5	16.3	
	41	1	1.2	17.4	
	42	2	2.3	19.8	
	44	6	7.0	26.7	
	45	5	5.8	32.6	
	46	2	2.3	34.9	
	3rd	47	6	7.0	41.9
	Quartile	48	2	2.3	44.2
49		4	4.7	48.8	
50		5	5.8	54.7	
51		10	11.6	66.3	
52		2	2.3	68.6	
53		4	4.7	73.3	
54		2	2.3	75.6	
55		7	8.1	83.7	
56		4	4.7	88.4	
57		4	4.7	93.0	
4th	59	1	1.2	94.2	
	60	3	3.5	97.7	
	62	2	2.3	100.0	
	(63-77)	(0)	(0.0)		
	Total	<u>86</u>	<u>100.0</u>		
	Mean - 48.128	Median - 50.000	Mode - 51.000	Std Dev - 8.316	

Figure 1: Distribution of SCORE Variable

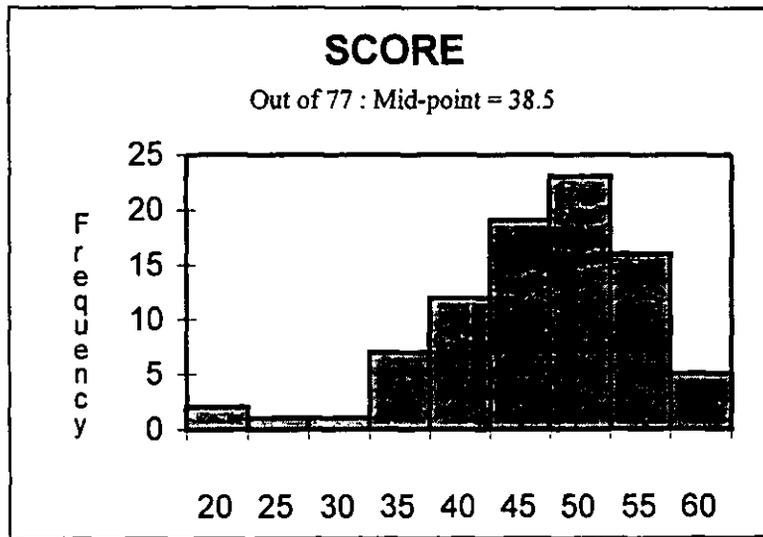


Table 5: Combined Analysis

Facet	Extremes	Percentage Score
PERSONAL	Frustrated-Fulfilled	98.5%
TANGIBLES	Loss-Gain	94.5%
COMMUNICATION	Difficult-Easy	83.0%
THREAT	Vulnerable-Secure	77.0%
GOOD/BAD	Bad-Good	72.5%
INTANGIBLE	Loss-Gain	64.5%
CERTAINTY	Expected-Denied	64.5%
DISRUPTION	Hinder-Smooth	49.5%
FEAR	Unease-Confidence	46.5%
WORKLOAD	More-Less	19.0%
APATHY	Challenging-Non-Caring	14.5%
CULTURE	Reject-Receptive	13.0%

Technically, these results indicate that the facets of PERSONAL, TANGIBLES and COMMUNICATION share the strongest relationship with the variable SCORE meaning that they are the best indicators of the variable. In other words, if the results for these facets are quite positive, we could assume that the overall SCORE for the organization would be quite positive meaning that the company holds optimistic perception of change.

These results suggests that there are at least four major groups in the organization representing four different attitudes to resistance (see also Figure 2):

Rejectors -

The nine responses that fall below the midpoint of the SCORE variable (see Table 4) indicate a category of workers that hold a negative perspective of change and are therefore likely to be opposed to the prospect of change in unproductive ways. These individuals may be referred to as "Rejectors". Without singling these workers out, it will be useful for the organization to identify the characteristics of these employees; where they work in the organization, the influence they hold and the particular concerns they have. This will facilitate the formulation and implementation of strategies that are appropriate and sensitive to the concerns of these employees.

Acceptors -

The 67 employees whose responses fell in the third quartile represents a group that accepts the likelihood of change and is inclined to contribute to it in positively. This is not to say that these workers will not resist change, rather they are likely to resist in ways that are useful to the change effort. These individuals can be referred to as "Acceptors" and once again, identifying the characteristics of these employees will assist strategy formulation and implementation.

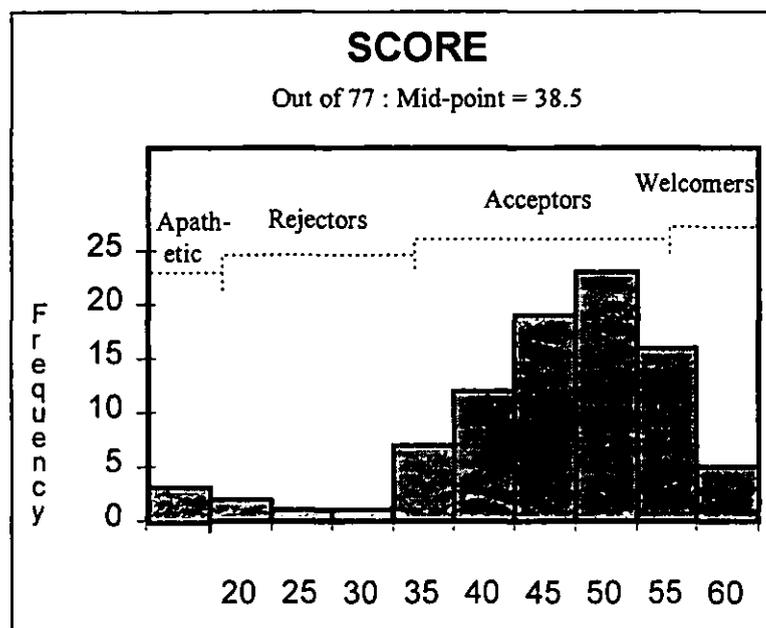
Welcomers -

The upper quartile of the SCORE variable represent the responses of ten workers who welcome the likelihood of change and are optimistic about the opportunities it presents. This group of individuals can be referred to as "Welcomers" and are likely to be the allies of change exhibiting positive forms of resistance in a change effort.

Apathetic -

Finally, there are the four workers who appear to be largely apathetic about the onset of change. This group is likely to exhibit uncooperative behavior and disinterest in a change effort, exhibiting such attitudes and behaviors that hinder rather than contribute to the process.

Figure 2: Four Different Attitudes to Resistance



Implications for the Company

These results carry numerous implications for the company in question. It can be generally concluded that the SCORE and usage proxy variable results indicate that the organization employs a workforce that is quite positive about the prospect of change and are therefore likely to exhibit positive forms of resistance. However, this general finding, can be broken down into more specific implications for each of the above identified groups:

Rejectors-

The minority of employees that are likely to actively oppose change in unconstructive ways need to be carefully managed. The common perception that workers think that their workmates are more negative about change than they are themselves (as indicated by the CULTURE facet), implies Resisters may in fact be quite vocal, relatively powerful or both. Kotter, Schlesinger and Sathé (1986:354) suggest that in such circumstances, education and communication strategies are most appropriate as these can help employees 'see the need for the logic of a change'. The organization should therefore take care in explaining the changes that will occur to employee WORKLOAD and their INTANGIBLE benefits, as these appear to be influential sources of resistance among this group of workers (as indicated by the usage proxy variable).

Acceptors -

Acceptors represent a group that are able to contribute positively to a change process as long as the implementors of change legitimize any resistance existing amongst these employees. There is fairly strong agreement among researchers and practitioners that the best way to do this is through participative techniques. This approach allows any resistance to encourage interest and involvement in the change; alternatives can be actively debated; and a solution that fosters commitment, not just compliance is a likely result (Kotter *et al* 1986:355; White and Bednar 1991:510).

Welcomers -

Welcomers represents a group that are likely to actively support change, thus their involvement in participative management techniques is vital. Drucker (1992) points out that peers actively supporting change and is far more influential than strategies that emphasize the commitment of senior management. The correlation and cross-tabulation results indicate that Welcomers are expecting to gain a sense of fulfillment (PERSONAL) or are optimistic about the tangible gains that change will bring about (TANGIBLE). An implementation process that is sensitive to these aspects of change will be most able to utilize the positive contribution Welcomers can make.

Apathetic -

Nadler (1983) advocates motivation-based strategies as the best way to manage a change effort in an environment of apathy. Such strategies tend to encourage worker dissatisfaction with the current state, while simultaneously encouraging involvement via some kind of reward scheme. Certainly these workers should not be singled out for special treatment, however the potential for negative resistance amongst apathetic employees does require a degree of sensitivity.

CONCLUSIONS

As mentioned earlier, the correlation and factor analysis that examined relationships amongst the facets of resistance provided more information about the validity of the measurement instrument itself. The correlation for example, identified a large number of significant relationships existing amongst all of the facets examined by the questionnaire. Two conclusions can be reached from this result:

- a) The facets identified are not the unique factors of resistance; or
- b) The responses were skewed, so that almost the entire sample was in favor of or against change and not very many were undecided.

Table 4 indicates that the results obtained are an even distribution of responses, suggesting that the evidence support option (a) above. This is slightly problematic as it is preferable that the testing instrument measure different aspects of resistance to gain a more holistic understanding of its presence or otherwise at a company. However, the factor analysis did not succeed in identifying any significant underlying factors that could explain the data. The process did extract four major factors that could explain 65% of variation, but required seven factors to produce an adequate model of explanation (85%+). This suggests that, in contrast to the results of the correlation, the questionnaire does manage to measure a number of these different facets of resistance.

In general, it can be concluded that evidence does support the notion that resistance is a multi-faceted phenomena, however it does not support that the instrument is able to measure eleven separate and distinct facets of resistance (plus apathy). The only damage this does to the instrument is that the 'resistance score' generated will be slightly biased in favor of a certain underlying facet of resistance. For example, TANGIBLE and INTANGIBLE may in fact be measuring a common factor: the fear of loss/hope of gain no matter whether that loss/gain is intangible or tangible. Where the scores are added together (as was the case with the SCORE variable), that loss or gain will be given twice the weighting because it is measured by two separate questions. There is little that can be done about this except to acknowledge it as a limitation.

Additionally, it could be argued that the correlation in fact points out the completeness of the instrument. It is, after all, far better to have redundant questions than to miss a crucial facet of resistance altogether.

The correlation and cross-tabulations which examined relationships between the surveyed facets of resistance and the variable SCORE also served to point out which facets were most influential in reflecting the common attitudes towards change. The analysis found that PERSONALS, TANGIBLES, and COMMUNICATION were the most important facets:

- Personal: How change makes a person *feel* is a strong determinant of their attitude towards change in general.
- Tangibles: How a person expects to gain or lose from a change is also a very strong determinant of their overall attitude.
- Communication: The ease of further communication about the change also has a remarkably strong effect on how an individual feels about change. This one surely has special implications for management.

The analysis also identified a number of surveyed facets whose relationship to resistance is questionable:

- Workload: Whether a person thought that a change meant more or less work was unrelated to the level of resistance presented by that person. Some people welcome additional work whilst others avoid it.
- Culture: How a person's colleagues feel about change also appeared to have no significant influence on his/her attitude to change.

The above discussion denotes a number of pertinent points. First of all, the results reported suggest that the instrument is a valid measure of resistance. While it did not succeed in clearly identifying discrete facets of resistance, it does manage to gauge whether resistance is a strong or weak organizational phenomenon, and whether it is positive or negative. Thus the instrument is able to provide the appropriate information to the organization that it can utilize towards the improvement of change management strategies. While the limitations of possible question redundancy and slight weighting inaccuracies are acknowledged, they are not considered problematic enough to outweigh the overall benefit of the tool.

As such, it is concluded that the organization surveyed is now in a far better position to implement change, given the knowledge it now has of its workforce. The predominant positive view of change indicates that the organization can confidently move ahead with its planning, however the pockets of negative resistance and apathy also call for caution and sensitivity. In particular, it is apparent that the influence which any change have on intangible benefits should be carefully considered and well communicated. Rejectors are

particularly sensitive to these issues (Rejectors are also sensitive to perceived changes in workloads, however as pointed out earlier this is not a good indicator of resistant attitudes).

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