THE EFFECTS OF ORGANISATIONAL RESTRUCTURING ON 'SURVIVOR' STRESS IN INFORMATION SYSTEMS PROFESSIONALS

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1. ABSTRACT

When companies downsize or outsource, the organisational restructuring that generally takes place can have serious effects on employee motivation and productivity. This research focuses on the staff who remain after such an exercise – the "survivors" - specifically the Information Systems staff "survivors" and identifies changes in their occupational stress levels.

A sample of 42 IS professionals, who had "survived" organisational restructuring, completed a questionnaire which measured various factors contributing to their perceived stress.

Analysis of the results showed that, where major restructuring had taken place, higher stress levels were mostly attributable to increased time pressures and work overload and, to a lesser extent, on role conflict.

Interestingly, those respondents who had undergone minor organisational restructuring reported higher levels of job satisfaction as well as no increase in stress levels.

Management must ensure that after major organisational change initiatives, "I.S. survivors" are carefully managed in terms of unambiguous work plans, re-skilling resources, career counselling, and innovative performance measurement systems to ensure high levels of motivation and productivity are maintained.

1.1 Keywords
Stress, organisation restructuring, productivity, motivation

2. INTRODUCTION
In 1995 over 450,000 employees lost their jobs in the United States as a result of restructuring [14]. An important study by Doherty and Horsted in the United Kingdom focused on the effect restructuring had on those employees who stayed with their organisations [7]. The employees who remain have received little research in terms of the restructuring impact, yet it is they who will partly determine the future direction and performance of the organisation. This is particularly important for I.S. employees who are in short supply worldwide and who are needed to complete urgently projects (for example, Y2K, client-server conversion and package implementation projects).

Downsizing, rightsizing, re-engineering and outsourcing are change initiatives commonly affecting many departments in organisations. The Information Systems (I.S.) department is pivotal in making these changes. A concern brought about by these changes has been the effect these changes have on the stress levels of I.S. professionals given that the technology is also changing rapidly.

Previous South African studies have highlighted the occupational stress levels of I.S. professionals [23]. Young, a clinical psychologist, found that low productivity, high absenteeism, poor decision-making and poor morale were all linked to increases in stress. This study investigated the relationship between occupational stress and health and work-related stress outcomes in I.S. professionals. The

findings of the study concluded that individuals who reported work overloads also experienced role ambiguity in their jobs, and individuals with tight deadlines also reported physical complaints of one kind or another.

Most of the previous research on layoffs and organisational restructuring has focused on the employees who lost their jobs, and not on those employees (known as the 'survivors') who remained behind after the restructuring and organisational change had taken place.

Along with these technological changes come structural changes, like the flattening of the company hierarchy and the subsequent retrenchment of many employees. According to Doherty and Horsted, increased stress levels, decreased motivation and decreased loyalty were some of the reactions of the 'survivors' of major structural changes undertaken by companies [8].

The phrase "*Survivor Syndrome*" describes the complex emotions experienced by the remaining employees when many of their colleagues and friends lose their jobs. Some of the emotions include decreased motivation and morale, uncertainty about their own survivability and reduced loyalty to the company after the change.

The effect on productivity and morale of individuals who have not lost their jobs has often been overlooked even though it is these employees whose motivation and productivity often dictate the organisation's effectiveness after the change [4].

3. STRESS AND THE IS PROFESSIONAL

This study focuses specifically on the effect of occupational stress on the IS professional. Occupational stress has been related to psychological stress and to adverse health outcomes. Low productivity, high absenteeism, poor decisions, bad judgment, low commitment and poor morale have all been attributed to increases in stress by previous studies [23][7][13]. It is therefore important to identify the stress factors which affect the IS professional.

Various factors are believed to affect the levels of occupational stress. Work overload is one of the chief factors attributed to producing high levels of occupational stress. According to McEvoy and Cascio, workers who feel required to work too long and too hard at too many tasks feel more stressed [15]. According to these authors, work pressure is another factor said to contribute to occupational stress. They report on studies that have shown that when the subjects felt they were under pressure to work longer and harder than their colleagues, there was a distinct rise in their serum uric acid level - a stress indicator.

Role conflict and role ambiguity are also associated with stress. This would have particular relevance in situations where there are dramatic changes in the work situation involving job reassignments, job re-definition, retraining, retrenchments, and redeployments. Social relationships developed in the work-place often play a role in combating

stress in employees, so the destruction of these relationships caused by the removal of colleagues from the work-place and/or political tension brought about by restructuring might lead to increases in job stress [20].

Using a model adapted by Mould and Young [19] as an initial framework, this study examined the role that changes in organisational structure and climate had on the levels of stress in IS professionals. Some of the variables taken from the Mould and Young model include:

- the threats of outsourcing and downsizing
- lack of participation and empowerment
- time pressure and work load
- role conflict and ambiguity

According to Newell and Dopson, most downsizing organisations are only buying half of the psychological contract with employees. The companies demand the traditional commitment and loyalty of employees but cannot provide the same job security as before [20]. This may cause higher levels of job insecurity and, as a direct result, higher stress levels for these employees. There is a tendency among these 'surviving' employees to show greater allegiance towards their colleagues and work teams than their organisations [8]. By identifying some of the factors affecting survivors' reactions to change, management can initiate new human resource practices to eliminate or reduce some of the negative side-effects. According to Brockner, these factors include the role of the perceived fairness of the layoff, the changing work conditions after the layoff, communication with employees about the layoff and the availability of an employee support programme [4].

There is evidence to suggest that a moderate level of job insecurity can increase the job performance of an employee possibly due to the fear of losing his or her job [8]. Nevertheless, in such a case, there could be a trade off of increased performance against lower loyalty. However, this increase in job performance could also be due to the introduction of new technologies and the use of new processes brought about by restructuring initiatives like Business Process Re-engineering or simply because the companies are achieving the same output with fewer staff [8].

The first 'Survivor Syndrome' Survey was carried out by Cranfield Human Resources Research Centre [7] and identified the following behaviours and work-related problems exhibited by surviving employees:

- decreased motivation, morale and confidence
- increased stress, insecurity and scepticism
- changing attitudes towards loyalty and, subsequently, organisational commitment

McCabe claims that the survivors of workforce reductions experience a wide range of emotions:

- grief at the loss of their associates

- guilt from feeling relief at being spared from the reductions

- anger that the company they trusted has changed the 'rules of the game'

- fear that if there is another round of cutbacks they may not be so fortunate [14].

These separate research findings of behaviours and emotions are very similar in nature. Brockner claims that these emotions and behaviours can be combated if management attend to the following considerations during the restructuring process:

- ensuring that the surviving employees perceive the restructuring to be handled fairly

- by keeping staff informed of what is happening

- re-skilling and redesigned the work roles

In order to remain successful in the aftermath of corporate restructuring, employees who remain need opportunities and a support system to come to terms with the emotions of downsizing, to take charge of their own career development, and to contribute effectively to the new organisation [4].

McCabe has found that survivors are often anxious to prove that they were worth keeping and that they are part of the new organisation [14]. After a downsizing initiative, many companies bring in new talent to add new skills and to widen the breadth of experience. Sometimes, however, the older employees are left to watch from the sidelines and their participation is looked upon as only secondary.

McCabe also argues that many companies have cut back their workforce without taking the time to re-engineer and re-design their processes and technology. Therefore, the nature of the work remains the same, with fewer employees working harder. Continuous overwork, he claims, builds anxiety levels, reduces morale and increases stress [14].

4. RESEARCH APPROACH
This study attempted to determine if major changes in the organisation's structure led to an increase in stress levels among those I.S. professionals remaining in the organisations (i.e. the 'survivors'). The major changes considered are downsizing, outsourcing, business process re-engineering and rightsizing as these changes tend to have a significant impact on the workforce and the working environment.

Startinf off with a model developed from the research literature by Mould and Young as a framework to derive a survey instrument, the study attempted to show that after an organisation undergoes major restructuring, the 'surviving' I.S. employees display higher levels of work stress [19].

The hypothesis developed for the study was:

H1: Major changes in the organisation's climate and structure (such as downsizing, outsourcing and BPR) will lead to significant increases in the occupational stress levels of the 'surviving' IS employees.

The research instrument used to measure the relationships under investigation was divided into two sections. The first section measured the demographic variables of the respondents and also required the respondent to rank the extent of the impact of the restructuring process on his/her organisation. The second section consisted of 23 questions derived from the *Stress Diagnostic Survey Questionnaire* used by Young [23]. The questions, (using a 5-point scale), measured Time Pressure (questions 1,3 and 5), Work Overload (questions 2 and 4), Role Conflict (question 6 and 7), Role Ambiguity (questions 8, 9 and 10), Career Development (question 11), Job Satisfaction/ Involvement (questions 12 to 15), Lack of Empowerment/ Participation (questions 16 to 19), Job Insecurity (question 20), Social Relations (questions 21 and 22), and Manner of Implementation (question 23).

The survey was posted to one hundred graduates from a private training establishment that focuses on the training of system analysts and I.S. project managers in large organisations in the Western Cape Province of South Africa. A further one hundred and fifty surveys were sent to previous part-time and full-time postgraduate I.S. graduates from the University of Cape Town. All these people were known to be employed in large oeganisations who had, to the author's knowledge, been involved in some kind of organisational restructure in the immediate past.

Out of the 250 surveys distributed, 42 usable surveys were received by the cut-off date. This represents a response rate of 17%. Response rates of 15-20% have been typical in South Africa in the past few years.

5. ANALYSIS OF RESULTS
The objective of the study was to show that the 'surviving' I.S. employees have increased stress levels after their organisations have undergone major restructuring.

Of the 42 respondents, 64% ranked the impact of the restructuring on their organisations as major. The following analysis compares the above group with the group of respondents who ranked their impact as minor (17%).

The Pearson Product-Moment Correlation method assumes that the scale used in the instrument (i.e. 1-5) has a normal distribution and the ratings are therefore non-directional. For the purposes of this study, the sample size obtained (42 respondents) was sufficient for this method.

However, to provide further support for the findings, the correlations in each case were recalculated using the Spearman Ranked Correlation method that assumes no normal distribution and considers the ratings as non-parametric. Any differences in findings between the two methods have been pointed out. However, before analysing

the data in sub-groups, an analysis of the data as a single group revealed the following results.

Stress Variables	No Change in Stress Levels	Higher Stress Levels
Work Overload	41%	33%
Time Pressure	37%	43%
Role Conflict	52%	19%
Role Ambiguity	22%	36%
Career Development	36%	50%
Job Satisfaction	41%	22%
Insecurity	48%	36%
Manner of implementation	17%	50%
Social Relations	38%	33%
Lack of empowerment	32%	42%

Table 1: Responses for Each Stress Variable.

Analysing the averages in Table 1, 41% of respondents reported no significant increases in their stress levels attributable to work overload as opposed to 33% who did report higher stress levels. The same pattern occurred for other variables like job satisfaction, work overload, time pressure, role ambiguity, career development, insecurity at work and social relations. In all these cases, there was a balance between respondents reporting no increase in stress than those reporting higher stress levels.

5.1 Role Conflict

Role conflict measures whether there has been an increase in the number of conflicting demands that the respondent has been receiving from his/her supervisors since the restructuring began. Table 1 shows that 52% of respondents reported no change in stress due to role conflict as opposed to only 19% that said they experienced higher stress levels. A significant positive relationship with Pearson Correlation Coefficients of .71 to .72 at the 0.05 level (see Table 2) exists between role conflict and the extent of the organisational restructuring. However, when using Spearman's ranked correlation method, only one out of the two variables measuring role conflict showed a significant correlation. Therefore, it seems that role conflict is a contributor to the higher stress levels experienced by respondents experiencing major organisational restructuring.

An analysis was then carried out comparing the stress variables between the two sub-groups (those respondents experiencing major restructuring and those experiencing minor restructuring).

5.2 Time Pressure and Work Overload

Out of all the respondents who rated their organisation's changes as major (i.e. '5' in the survey instrument rating), 65% said that since the restructuring, they have had to work against shorter deadlines and 81% reported greater workloads in general. This is in direct contrast with those respondents who considered their organisation's restructuring as minor. Not surprisingly, only 29% of these respondents reported higher stress levels attributable to work overload and shorter deadlines.

Stress Variable focus	Question Number	Rate of Restructuring	Significance Level (p)
Time Pressure	1	.69 *	<0.05
Time Pressure	3	.70 *	<0.05
Time Pressure	5	.71 *	<0.05
Work Overload	2	.70 *	<0.05
Work Overload	4	.71 *	<0.05
Role Conflict	6	.71 *	<0.05
Role Conflict	7	.72 *	<0.05

* Significant at p-value <0.05

Table 2: Pearson Correlation Coefficients

To support these findings, the two stress variables, time pressure and work overload, were correlated against the rate of restructuring as specified by each respondent. The Pearson Correlation Coefficients for the two variables were acceptably high ranging from .69 to .71 at the 0.05 level (see Table 2). Spearman's ranked correlation method produced similar results to the Pearson method. This suggests that there is a significant positive relationship between the degree of organisational restructuring and the stress levels due to work overload and time pressure.

There is, therefore, statistical support for the finding that when I.S. 'survivors' rated the impact of the restructuring on the organisation as major, they also reported higher stress levels (attributable mostly to time pressure, work overload and role conflict).

5.3 Other Factors

Approximately 80% of respondents who rated their organisations' changes as major reported that the changes in the workplace have resulted in an increase in the emphasis on training and development. Also, every respondent in this group said that the restructured work-place demands that they learn and develop new technical and communication skills.

When comparing the results of respondents employed in management positions versus those employed in non-

management positions, it was found that 71% of managers felt that there had been an increase in the emphasis on training and development while only 43% of the non-management group felt the same way. This result supports the findings by Doherty and Horsted that post-restructuring help and re-skilling focused mainly on management rather than non-management 'survivors'. However, this could suggest that training and support plans had not yet filtered down to all I.S. staff [7].

When grouping those respondents whose organisations were undergoing restructuring to a minor degree (i.e. '1' or '2'), it was found that they reported significantly higher levels of job satisfaction as a result of the restructuring compared with respondents experiencing major restructuring.

The manner in which the organisational changes were implemented was also found to have a significant effect on stress levels. In Table 1, 50% of the total respondents experienced higher levels of stress due to this factor while only 17% indicated that they felt no increase in their stress levels.

All respondents who rated the restructuring process as major reported that, if they were given the option, they would not rejoin their organisation (job satisfaction – question 15) and were against the manner in which the implementation of the restructuring process was managed. This result is reinforced by a statistical correlation between the degree of organisational restructuring and the two variables Rejoin and Manner of implementation as shown in Table 3.

Stress Variables	Rate of Restructuring	Rejoin	Manner of implementation
Rate of restructuring	1.00	.77 *	.83 *
Rejoin	.77 *	1.00	.99 *
Manner of implementation	.83 *	.99 *	1.00

* Significant at p-value <0.05

Table 3: Pearson Correlation Coefficients

The Pearson correlation coefficients show a highly significant relationship between degree of restructuring and Rejoin and Manner of implementation factors. This is further supported by Spearman's ranked correlation coefficients.

6. SUMMARY

When the I.S. 'survivors' rated the impact of their organisation restructuring as high, most also reported higher stress levels as a direct result. The increased stress was attributable mostly to time pressure, work overload and role conflict. Those respondents whose organisations had undergone restructuring to a minor degree reported higher levels of job satisfaction as well as no increase in stress levels due to the restructuring. These two findings support

the hypothesis that major organisational changes will lead to significant increases in the occupational stress levels of the 'surviving' IS employees.

However, the extent of the organisation's restructuring was a perceived rating by the respondent. In some cases, respondents from the same organisation rated the impact of the restructuring on the organisation differently and identified different types of change processes taking place at the same organisation.

Re-training and re-skilling had no direct relationship to higher stress levels as experienced by 'surviving' employees. Nevertheless, it was found that post-restructuring help and re-skilling focused mainly on management rather than on non-management 'survivors'. This could have the affect of increasing the stress levels of the non-management employees especially if the imbalance in support between the two groups is highly visible.

It was found that the manner in which the implementation of the restructuring process was managed is directly related to the respondent's decision about whether or not they would, if given the option, rejoin their organisations. Therefore, respondents who consider the restructuring process as mismanaged and having a major impact on the organisation, would probably decide not to rejoin their organisations knowing what they know now. This finding emphasises the importance and value of managing the effects of organisational change on 'survivors' and is supported by Brockner's research findings [4].

motivation and productivity of I.S. professionals must continue to be based on sound management practice [6]. However, the current situation regarding rapid technology changes, major organisational restructuring and I.S. staff shortages means that very close management attention is required when handling I.S. survivors. When major restructuring occurs, it seems that stress is increased because of role conflict, increased time pressure and work overload. Clearer project planning, individual objective setting and work smoothing is required. This should be coupled with involvement in change planning, planning transparency by top management and professional advice and support. In addition, new approaches to performance measurement are needed to ensure a soound two-way contract with the survivor.

Although the limitations of this research are significant, there are a number of patterns that have emerged from the study. Researching organisations which are undergoing major restructuring is a difficult process, not only because the information obtained may be extremely sensitive but also because the individuals involved are not always willing or able to actively participate in such studies..

A limitation of the study was that respondents were expected to rate the impact of the restructuring in their organisations without guidelines as to what constituted major restructuring and what constituted minor

restructuring. Further research could attempt to categorise restructuring initiatives. This could assist researchers to develop a better understanding of whether major organisational restructuring leads to increases in work stress and/or decreases in organisational commitment.

Another potential area for further research could be an investigation of the relationship between job insecurity, job performance and occupational stress, and how these variables are affected by the organisational climate. Doherty and Horsted state there is evidence to suggest that a moderate level of job insecurity can lead to increased job performance [7]. Further research could investigate whether this relationship is evident in organisations where major reorganisation is taking place. Restructuring programmes in many organisations do not elicit effective participation from the employees in the planning and implementation of these programmes. To reduce resistance to change and to build stronger employe-employer relationships,, the organisations' future vision must be shared by all stakeholders but especially with I.S. professionals who are involved in the change projects.

Downsizing and other organisation initiatives make sense on paper. Lean and mean organisations are intuitively correct. However, it is people who make organisations successful, and "lean systems, if properly implemented, are both more dynamic and more fragile than their predecessors" [5].

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