"Putting a price on Staff Turnover" a case study.

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Introduction

The story starts with a Department of Trade sponsored research contract (Teaching Company Scheme) within a medium sized double glazing company. The company (a family owned and run business) came seeking advice and assistance in improving their productivity and quality. But, it was quickly identified that their problems, which included low productivity, were in fact caused by a number of deep seated issues within the operation based around an underlying problem of high staff turnover, and failure to operate with a full production staffing level.

The company, Piper Windows are an independent manufacturer of UPVC windows, doors and conservatories. The business started in 1981, and concentrated mainly on the commercial market, both as main contractors and sub-contractors on refurbishment projects ranging in value from £50,000 to £1.5 million. Their customers in this sector include local authorities, housing associations, PSA, school and hospitals. They have a smaller manufacturing sector dealing with the domestic market. Their Annual turnover for 2000-2001 was £10.1 million

The commercial market in the UK has grown from £400 million in 1998 to $450 million in 2001. Anglia Double Glazing PLC, is the largest player in the market with a 20% market share, Piper Windows holds a 2½% share. Although, Pipers is currently growing slightly faster than the market, the management believe that the company can gain a bigger market share by being more competitive and by fully using their current capacity.

Currently Piper Windows is operating on a single site, split into two units, one for commercial and one for domestic business, in Ramsgate, Kent, England. The business buys-in pre-formed extruded plastic, and then transforms it into the window/door units. They currently use two profiles of plastic from two suppliers, with the two units manufacturing one type each.

During the early stages of the research work, the company's problems started to become more clear. Despite the directors instance that their problems were due to poor use of equipment, bad layout and quality issues. It was soon identified that the basic cause was due to the poor levels of employment and the high staff turnover. The company had over the past 10 years, won a number of regional awards for training and training initiative, but a little research established that this was all for initial training for new starters, and there was no ongoing training or staff development.

It has proved hard to convince the directors that this is the major problem, as they were convinced that the answer lay in better performance through better use of their current operations, which may turn-out to be true in the long run, but not achievable until they obtain a fully stable employment record for their factory floor staff. The first step was to establish their actual staff turnover, and to compare this within the sector and the rest of the business. Having identified this, the second step was to establish the cost to the company of their staff turnover.

Background to the Human Resource Elements

It has been clearly acknowledged that an organisation requires a human resource to function. Without the human resource element it is believed that an organisation can neither grow nor develop. Storey (2001) stated that, it is Human Resource Management that creates "the ability to attract and hold on to talented employees is the single most reliable predictor of overall excellence" From this it can be seen that the selection, training and retention of employees is a vital element for a successful organisation.

Labour turnover is best understood as the movement of labour, out of and into a working organisation, Argyle, M. (1989). Employee turnover has long been a concern of organisations in many sectors, researchers such as Pettmen (1975) Price (1977), Mobley (1975), and Gardener(1982). "There is as yet no universally accepted account or framework for why people choose to leave". (Lee and Mitchell 1994). Thus organisations are limited from the beginning to understand the process after the event has occurred, which is not an accepted means by which to predict the likelihood of an individual leaving their organisation. This therefore "prohibits the prediction of turnover" (Terborg and Lee 1984)

A recent stream of research has empirically demonstrated a significant relationship between sound-human-resources practices and financial performance, Pfeffer and Viega (1999), Heskett et.al. (1994), and Delerey and Doty (1996) who found that three Human-resources practices namely, results-oriented performance appraisals, employment security and profit sharing - were strongly related to the return on equity and other financial measures of a firm's performance. Additionally successful American corporations such as Starbucks and Southwest Airlines have attributed their profitability to good human-resources practices, including an emphasis on employee retention and development. Turnover may be considered in terms of that that is available and that that is not. Calculating staff turnover in the case of Piper Glazing, should simply be achievable via the company's employment records and the payroll information. Unfortunately this did not prove to be so straightforward in practise.

The Cost of Employee Turnover

Although many organisations still accept turnover as an inevitable fact, or 'necessary evil' and the result of employing people, some enlightening organisations have seen this as an unnecessary cost and developed strategies to encourage staff retention. Singapore Airlines has a strategy aimed at obtaining an average staff retention of 7 - 10 years for their in flight staff, cabin and cockpit crew. Knowing how much staff turnover costs would permit the company to make a realistic decision about the value of investing in a programme aimed at staff retention, and how much they should consider investing in this area. In fact it would help a human-resource department face up to the reality of their past action. Formulas developed over the 1970's and 1980's Cascio (1982), have been refined and developed over the last decade. Most formulas include separate cost, training costs and an estimate for lost production, and or productivity.

Wesmuth and Davis (1983a) discovered that most managers interviewed during their research understood that turnover was costly, few had any strategies in mind, let alone in place for managing staff turnover. Additionally, Wesmuth and Davis (1983b) discovered that most managers felt they had no way of actually measuring the impact on their turnover or bottom line. Using a model adopted from Cascio (1982), Wesmuth and Davis (1983c) estimated that the average cost of replacing an hourly line employee was $1,500 whilst this jumped to $3,000 for salaried staff. (Wesmuth and Davis' research was carried out in the US hotel industry. Goss-Turner (1989) found that the cost of staff turnover ranged from £750 to £4,500 and Lashley and Chaplain (1999) that replacement costs were between £735 and £5,008 in 1996-7.

The initial aim of this part of the research programme, was to identify a realistic cost of staff turnover in the Piper's factory for the 'shop floor staff'. To do this, a range of different models, and suggested cost drives were investigated and the following series of categories (table 1.)

were identified as being appropriate. Initially five categories were recognised, namely separation costs, recruitment, selection, hiring and lost productivity. Each of these categories were a comprise of a number of cost areas that when combined provide a reasonable basis to establish the total cost of staff turnover. This model was eventually modified inline with the day-to-day reality of Piper Windows operations, as seen in table 2.

Table 1. Staff Turnover Cost Categories

Separation costs	Recruitment costs	Selection costs	Hiring costs	Loss of productivity costs
1. Exit interviewer 2. Employee exit interview 3. Paper processing 4. Severance pay	1. Advertising 2. Search and agency fees 3. Internal referral costs 4. Managerial pre-employment admin 5. Applicants travel costs 6. Recruiters time 7. HR pre-employment admin costs 8. Misc. correspondence, telephone etc.	1. HR interview 2. Managerial interview 3. Applicants travel costs 4. Background and reference checks 5. Medical 6. HR admin function 7. Managerial admin	1. HR admin costs 8. Managerial admin 9. Induction 10. Relocation 11. Orientation training 12. Formal training 13. On-the-job training 14. Uniforms 15. Security 2. Information and literature	1. Vacancy costs 2. Pre-departure productivity loss 3. Learning curve 4. Errors and waste 5. Supervisory disruption 6. Peer disruption

The Research

The initial problems were in trying to identify the actual staff turnover figures, as there had been no detailed records kept, and it was necessary to create this from payroll. Here again we discovered that these were simply in alphabetical order not job or department sequence. The staff turnover or Separation Rate formula is:

$$\text{Separation Rate:} = \left(\frac{\text{No of leavers in a period}}{\text{Average no. employed in period}} \right)$$

The period used was one year, and this was to cover only the 'Shop floor'
It would have been ideal to use a more accurate approach, such as suggested in IRS management Review 1999,

- Unplanned resignations,
- Early retirements
- End of fixed term contracts
- Dismissals
- Retirements

Unfortunately no such record was available nor was there any way of establishing this for the leavers over the past one year.
A second approach used was a Skill Wastage Index. Turnover is actual a general problem, if this

$$\text{Skills Wastage Index} = \left(\frac{\text{No of employees at the end of a period with a given length of service}}{\text{Average No. Employed in the Period}} \right) \text{X } 100$$

can be combined with a skills wastage then special areas of problems may be identified.
If the results of such research produces a high staff turnover/separation rate and low skills wastage rate, staff turnover is generally the problem in many areas. However, if they are both high, turnover is a major problem in a few key areas.

The third area measured was the Labour Stability index

$$\text{Labour Stability} \quad \frac{\text{No. of employees Exceeding 1 years Service}}{\text{No of employees employed 1 year ago}} \text{ X } 100$$

It was decided to use Labour Stability and not Skills Wastage Index, due the lack of reliable data.

The Results

Ratio	**Factory**	**Stores**
Staff Turnover	100%	46%
Labour Stability Index	43%	47%
Ration of Leavers /Joiners	0.80	0.43

This information was then sub divided between the 2 sections, commercial and domestic markets

	Commercial		Domestic	
	Factory	Stores	Factory	Stores
Staff Turnover	95%	67%	111%	0%
Labour stability	41%	60%	53%	100%

In order to truly identify the level of this problem it would have been ideal to benchmark it against the industries staff turnover, unfortunately no such information was available. However, information was obtained on the UK Operative and Assembly Manual in the Manufacturing industries for October 2000, CIP (2000) which produced a national average staff turnover rate of 22%.

Further analysis of the turnover resulted in more startling facts, the ratio of leavers to joiners showed that 80% of those employees joining the factory in the past year left within 12 months, compared with 40% in the stores area. (It should be realised that the stores area is a much smaller area, average number of employees in the period 2001, employed in Stores was 9,

compared to 64 in the factory). This means that of every 10 employees started in the production area, only 2 were still employed a year later!

Job Tenure among the Current Staff

As much as it is important to identify staff turnover, it is equally important to identify the level of retention. The table below shows the service length of shop floor employees over the year, the main issue highlights the fact that 75% of the staff had been employed for under 1 year and in fact in the domestic site 85% of the production staff had been employed for less than a year.

	Commercial		Domestic			
Length of service	Factory No. of Staff	Stores No of Staff	Factory No. of Staff	Stores No of Staff	% of total shop floor workforce	Cumulative
Under 3 months	11	3	8	1	32	32%
3 - 6 months	2	0	8	0	5	37%
6 - 12 months	9	1	8	0	16	53%
12-24 months	10	1	5	0	22	75%
Over 24 months	12	2	3	1	25	100%
	44	7	20	2	73%	

The Actual Cost of Labour Turnover

The method used to calculate this was based around a combination of a check list created by Bliss and Associates, Inc. (www.ers.infomart-usa.com/turnoverarticle.htm, Dec 2000) and a checklist from "Hinkin, and Tracey (2000), this has been adopted from their earlier model
1. To suit the needs of a small private company.
2. The needs of a manufacturing operation as opposed to a service organisation
see table 2:
There are a number of areas where it was not possible to calculate or ascertained actual figures, and a number of areas where the company do not operate the process, for example, the company held no termination interviews, no induction programme, nor do they currently have a uniforms.

Table 2. Turnover-Cost Categories ~~Issue does not exist, or cannot be measured~~
1. Separation Costs - Costs due to a person leaving ~~a: Exit interview~~ ~~b: Employee Exit interview~~ ~~c: Paper processing~~ ~~d: Severance pay~~ e: Cost of Manager who has to understand work remaining and cover work until replacement is found f: Cost of training invested in employees who have left. ~~G: Cost of lost knowledge, skill and controls~~
2. Recruitment and Attracting Costs - cost of finding the right candidate a: Advertising b~~: Search and Agency Fees~~ ~~c: Internal referral fees~~ ~~d: Managerial pre-employment~~ ~~e: Applicants Travel~~ f: Recruiter time - cost incurred in respect of the recruitment process g: Recruiters time - administration records
3. Selection Costs - cost of selecting the right candidate a: HR Interview - cost of conducting the interview b: HR administration function ~~c: Managerial Interview~~

	~~d: Applicants travel costs~~ ~~e: Medical examination~~ ~~f: Managerial administration function~~
4. Hiring Costs - Cost of bringing a person on board	~~a: HR Administration Functions~~ ~~b: Managerial administration functions~~ ~~c: Relocation costs~~ d: Cost of bring the person onboard - payroll - records, clock cards ~~e: Induction~~ f: Orientation - initiation into production systems, learning curve g: Formal Training - cost of dept. training programme, and relevant staff costs h: On-the-job training ~~i: Uniforms~~ ~~j: Security~~ k: Information literature = company policy documentation
5. Lost Productivity Costs -	a: Vacancy Costs - cost of person who fills-in b: Lost Profit - production losses ~~c: Errors and waste~~ d: Supervision disruption ~~e: Peer disruption~~ f: ~~Pre-departure productivity loss.~~

The Actual costs,

The Five areas identified were examined, care was taken to ensure there was no double counting, inflated costing or overstatement of the times and costs involved.

Separation costs - Total cost £ 27,045

Cost of management who has to understand plan, organise and cover if no replacement is available the re-arranged work

- No of positions permanently vacant 10 (12% shortage an average over the year)
- Time taken by Production Manager ½ hr. per day for re-allocation (start of day)
- Time taken by Production Manager ½ hr. per day to calculate outstanding work (end of Day)
- Cost of Production Managers time per hour £9 per hour
  - Total 10x(5 hrs per week x 48 weeks x £9) = £21,600

Cost of invested Training in leaving staff

- Cost of NVQ (all staff over 25 years old) = £495
- No of staff left with NVQ training = 11
  - Total 11 x £495 =£5,445

Recruiting and Attracting costs Total Cost £2,334.69

Advertising Costs -
Direct cost incurred over the year for factory staff £1,308

Recruiter's time -
Time taken per position = 10 minutes
Number of permanent vacant posts 10
Internal rate of pay £9.00

Cost = 10 x 10 minutes = 1.66 hrs per wk

1.66 x 48 x £9 = £717

Recruiter's time
Time taken to review each application 2 minutes
Average applications received per week 20
Internal recruiter hourly rate £9
Calculations = 2 minutes x 20 = 0.66 x £9 x 48 = £285.12

Recruiters time: to arrange interviews

- Time take to contact interviewer 2 minutes
- Hourly rate £9
- No of individuals contacted 82
- Cost of phone call £0.10

Total costs - 2 x 82 minutes x £9 2.73 hrs x 9 = £24.57

Selection Costs **Total Cost £529**

HR interview - cost of conducting interviews,

- Time taken per interview = 30 minutes
- No of interviews undertaken (actual) 82
- Internal recruiters hour rate £9

Total 30 mins (0.5 hrs x £9 x 82) = £ 369

HR Administrative Functions

- Time to process each application = 2 mins.
- HR admin hourly rate of pay = £5.00
- Number of applications a week = 20

Total (20 x 2 x 48)/60 x £5 = £160

Hiring Costs **Total Cost £59,695.73**

Cost of bringing the person on board

- Time taken per person for payroll 5 mins
- Time taken per person for clock cards 5 mins
- Account clerks hour rate of pay = £5
- Production managers rate of pay =£9
- Number of leavers per year = 73 (100% of actual work force)

Total (5 x 73)/60 x £9 = £54.75 + (5 x 73/60) x 5 = 30.42 = £85.17

Orientation

Annual factory wage for new employees £12,909

- Staff leaving after 1 month 75% annual salary loss for 1st Month £12,909 x 75% /12 = £806.81
- Staff leaving after 2 months 50% annual salary loss for 2nd Month £12,909 x 50% /12 = £537.88 + £808.81 = £1,346.69

- Staff leaving after 3 months 25% annual salary loss for 3rd Month £12,909 x 25% /12
  =£268.94 +£537.88+£806.81 = £1,613.63

Number of leavers in first month 35 = 35 x £ 806.81 = £28,238.35
Number of leavers in second month 9 = 9 x £1,346.69 = £12,120.21
Number of leavers in third month 6 = 6 x £1,613.63 = £ 9,681.78
Total cost = £50,040.34

Formal Training

- NVQ for staff over 25
- Number of staff involved 22 (50% leaving)
- Staff hours per person 10
- Rate of Pay £6.00 average for staff involved

Total Cost 22 x £6 x 10 £1,320

On-Job Training - cost of staff involved

- No of staff in need of training 73
- Hours per week 3 hours per day 5 days
- Rate of pay 50% £9 + 50% £6 = £7.50

Total 73 x 3 x 5 x £7.50 = £8,212.50

Informational literature

- Cost of booklets, £0.10
- Number of leavers in year 73
- Cost of time to print contracts 5 minutes
- Rate of pay of secretary £5.00 per hr.

Total cost £0.10 x 73 + (73 x 5)/60 x £5 £37.72

Lost Productivity Costs **Total Cost** **£88,769**

The lower of the 2 options (vacancy or loss of productivity) was taken

Vacancy Costs (cost of temporary replacement)

- No of staff vacancies 10
- No of weeks 48
- Factory basic wages for extra hours per week £248.25

Total 10 x 48 x £248.25 = £119,160

Loss of productivity (if not replaced)

- Productivity average no of shop floor staff per week/ no required
  66/81 = 81.5% x profit for year (£454,534)
  = £454,534 x 18.5% = £84,089

Supervisory disruption

- Cost of foreman's time £7.50 per hr.
- % of time disrupted due to new staff demand and missing staff 25%
- No of weeks 48
- Average no of hours worked by staff 52 hours

Total 52 x £7.50 x 48 x 0.25 = £4,680

However there is no evidence of any temporary cover other than staff overtime

Table 3. Staff Turnover - Cost elements	
Separation costs	£
Cost of Manager elements	21,600
Cost of training invested in employees who left.	5,445
Total separation costs	27,045
Cost of Recruitment and Attracting the Staff	
Advertising	1,308
Recruiting staff costs - preparation	717
- reviewing application	285
- Background and preparation for interviews	25
Total cost of recruitment and attracting applicants	2,335
Selection Costs	
HR interviewing	369
HR administrative costs	160
Total of selection costs	529
Selection Costs	
HR interview	85
Orientation and learning curve	50,040
Formal training	1,320
On-job -training	8,212
Information leaflets	38
Total selection costs	59,695
Lost Productivity Costs	
Cost of vacancy (temporary replacement costs) or (either or <lowest>taken)	<119,160>
Lost profit	84,089
Supervisory disruption	4,680
Total lost productivity	88,769
Total Cost of Staff Turnover 2001	£178,373

Total Cost per leaver (total cost divided by total number of leavers)

Number of factory leavers 64
Number of Store leavers 4
Total Leavers 68

Cost per leaver = 178,373/68 = £2,623.13

These figures are on the conservative side, and have totally ignored the costs of loss of quality, remake and much of the inevitable overtime. Pipers have over the year been working an additional half shift on a Saturday morning to ensure that they meet their order schedule, this has

been done at an overtime rate for all staff and has generally resulted in a higher staff attendance on a Saturday shift, than achieved for the rest of the average working week. The reason for the omission of these elements is the difficulty in calculating the amounts, the risk of double counting and to ensure that the results presented to the managing director were believed.

Discussion issues

Staff turnover is a symptom of an underlying set of problems, this was the first stage of this research programme, although we did not specifically set out to discover the cause of the turnover, this will be the next stage. It became clear that the turnover is caused primarily by basic problems in selection, induction and motivation within the 'shop floor'. In cases where management believe that finding an answer to staff turnover problems is too expensive, or of little relevance to the 'real problem' i.e. poor productivity, it is essential to make them aware of the real cost of staff turnover in lost profit or the effect on the bottom line, in this case 41.23% of the year actual profit.
The second point that brings this home is that it represents a cost per hour of £1.37 for every employee on the factory floor.
Another area that the research was unable to measure or cost fully, was that of staff morale, and how this might have a snowball effect on productivity and staff turnover. If as a result of reducing the level of staff turnover, the staff morale is raised then there can be a direct effect on the productivity in terms of quality and actual output. Finally, in the case of Piper Windows the only training undertaken is repetitive training for new starters. If the turnover problem was resolved then the money saved on repetitive training could be invested in ongoing staff development and training, so further raising the staff morale, working environment and product quality.

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