PARETO 80/20

Focus on the vital few, not the insignificant many

Jersey Business
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An example of how to create a Pareto chart

A business has recognised they are struggling with a lot of invoice errors. To find out the reasons why, the team begin by categorising the 204 invoices that had been created incorrectly.

Reason for errors	Value £	Number incorrect invoices
Fee rate errors	64k	104
Incorrect address	8k	6
Incorrect service descriptors	48k	11
Price errors	20k	68
Discounts	7k	10
Late service provision	2k	1
Late filing of accounts	4k	1
Incorrect software despatch	7k	3

The analysis was then organised into a Pareto data chart to show the volume of incorrect invoices being created by category in descending order.

No	Reason	Value £	Cum Volume	%	Cum %
1	Fee rate errors	104	104	51	51
2	Price error	68	172	33	84
3	Incorrect service descriptors	11	183	5.5	89.5
4	Discounts	10	193	5	94.5
5	Incorrect address	6	199	3	97.5
6	Incorrect software despatch	3	202	1.5	99
7	Late service provision	1	203	0.5	99.5
8	Late filing of accounts	1	204	0.5	100
	Total	**204**			

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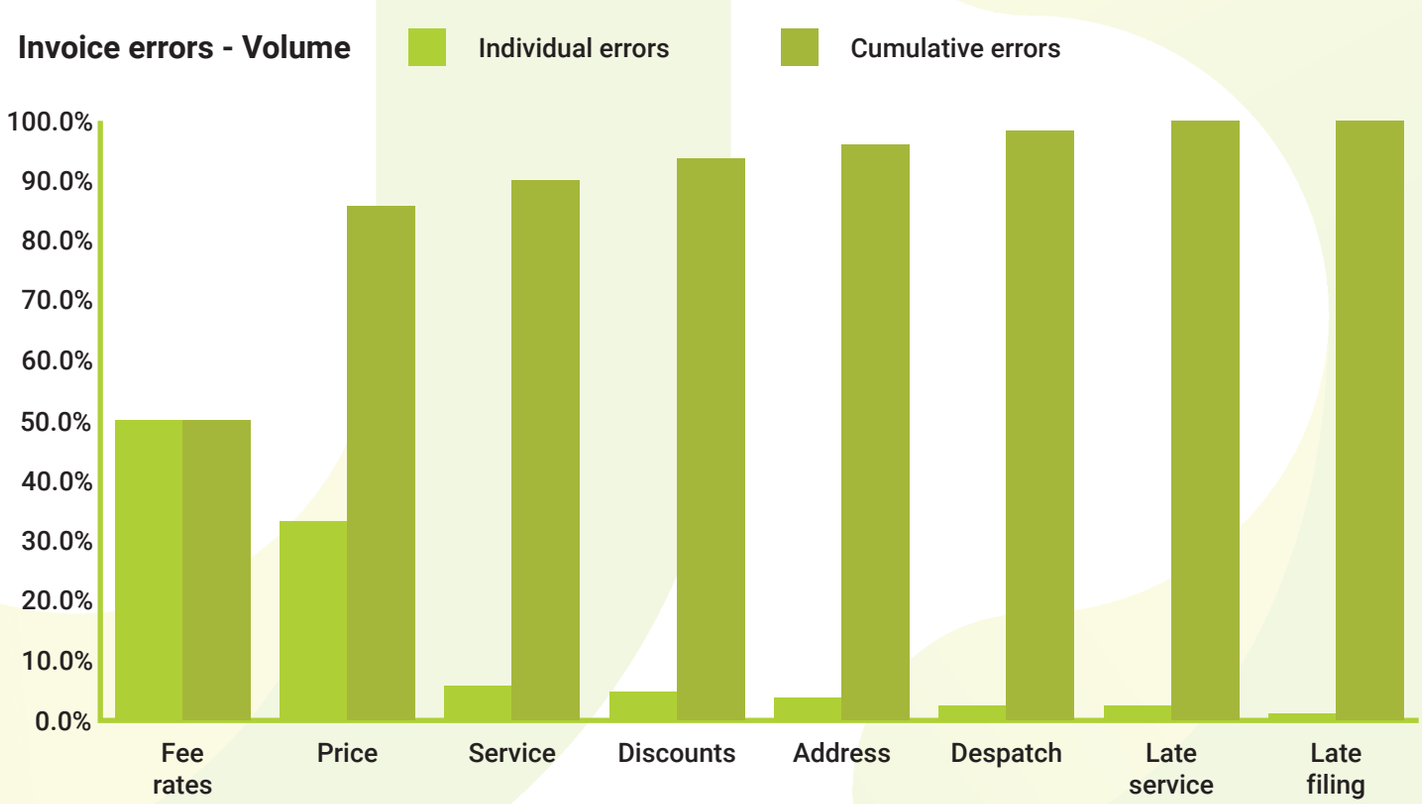
The analysis was also organised into a Pareto chart to show the value of incorrect invoices being created by category in descending order.

No	Reason	Value £	Cum Volume	%	Cum %
1	Fee rate errors	64k	64k	40	40
2	Price error	48k	112k	30	70
3	Incorrect service descriptors	20k	132k	12.5	82.5
4	Discounts	8k	140k	5	87.5
5	Incorrect address	7k	147k	4.5	92
6	Incorrect software despatch	7k	154k	4.5	96.5
7	Late service provision	4k	158k	2.5	99
8	Late filing of accounts	2k	160k	1	100
	Total	**160k**			

This can now be shown as visual data to quickly see where the focus area should be for improvement.



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Step-by-step guide to creating your Pareto chart

1. Decide what categories you will use to group items.
2. Decide what measurement is appropriate such as frequency, quantity, cost, and time.
3. Decide what period the Pareto chart will cover: One work cycle? One full day? A week?
4. Collect the data, recording the category each time (or assemble data that already exists).
5. Add up the measurements for each category.
6. Determine the appropriate scale for the measurements you have collected.
7. Construct and label bars for each category in height order, starting with the tallest first.

Optional

1. Calculate the percentage for each category. The total for that category divided by the total for all categories. Draw a right vertical axis and label it with percentages. Be sure the two scales match. For example, the left measurement that corresponds to one-half should be exactly opposite 50% on the right scale.
2. Calculate and draw cumulative sums. Add the totals for the first and second categories and place a dot above the second bar indicating that sum. To that sum add the subtotal for the third category and place a dot above the third bar for that new sum. Continue the process for all the bars. Connect the dots, starting at the top of the first bar. The last dot should reach 100% on the right scale.