

Academic Project

Layoff Trends Analysis: Workforce Impact & Business Insights

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Layoff Trend Analysis: Key Insights

Introduction

This analysis uses SQL-based data analysis to explore workforce reductions across industries, countries, and company stages. The goal is to identify **layoff patterns, industry trends, and the impact of funding on employment.**

DATA: COLUMNS in layoffs Table

SELECT * FROM layoffs;

	company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised
►	Blue Origin	Seattle	aerospace	1000	0.1	2025-02-13	Unknown	United States	167
	Sophos	Oxford	security	0	0.06	2025-02-13	Acquired	United States	125
	Zepz	London	finance	200	0.2	2025-02-12	Series E	United Kingdom	700
	Getaround	SF Bay Area	transportation	0	0	2025-02-12	Series D	United States	403
	Unity	SF Bay Area	other	0	0	2025-02-11	Post-IPO	United States	1300
	Meta	SF Bay Area	consumer	3600	0.05	2025-02-10	Post-IPO	United States	26000
	Justworks	New York City	hr	200	0	2025-02-10	Unknown	United States	160
	MessageBird	Amsterdam	other	120	0.33	2025-02-10	Series C	Netherlands	1100
	Sprinklr	New York City	support	500	0.15	2025-02-06	Post-IPO	United States	429
	Workday	SF Bay Area	hr	1750	0.08	2025-02-05	Post-IPO	United States	230
	Outbrain	New York City	marketing	200	0	2025-02-05	Post-IPO	United States	394

-- ===== BASIC ANALYSIS SECTION =====

1. Layoff Trends by Company, Industry, & Country

- **Companies with the Most Layoffs:** Some organizations had significantly higher layoffs, indicating financial struggles or restructuring.

-- To Find Total layoffs per Company

```
SELECT company, SUM(total_laid_off) AS total_layoffs
FROM layoffs
GROUP BY company
ORDER BY total_layoffs DESC;
```

company	total_layoffs
Amazon	27840
Meta	24600
Intel	16057
Microsoft	14708
Tesla	14500
Cisco	14300
Google	13472
Dell	12650
Salesforce	11140
SAP	11000
Philips	10000
Ericsson	8500
Flink	8100
Micron	7200

- **Industry Impact:** Sectors like consumer, retail, and hardware saw the most layoffs, reflecting economic shifts.

-- To Find Layoffs by Industry

```
SELECT industry, SUM(total_laid_off) as total_layoffs
FROM layoffs
GROUP BY industry
```

ORDER BY total_layoffs DESC;

industry	total_layoffs
consumer	65183
retail	63851
other	61371
hardware	54870
transportation	47462
finance	42093
food	39461
healthcare	37436
infrastructure	20077
education	17483
sales	15023
crypto	14279
real estate	13197
hr	11600

- **Geographic Trends:** Layoffs were **higher in certain countries**, influenced by **economic downturns and market conditions**.

-- To Find layoffs by Country

```
SELECT country, SUM(total_laid_off) as total_layoffs
FROM layoffs
GROUP BY country
ORDER BY total_layoffs DESC;
```

country	total_layoffs
United States	407168
India	39619
Germany	29584
United Kingdom	19162
Sweden	15159
Netherlands	14525
Canada	12096
Brazil	7982
Israel	7882
China	6390

2. Monthly Layoff Patterns

- **Fluctuations:** Layoffs varied by month, with some periods showing significant spikes.

-- To Find layoffs by Month (Monthly Trend)

```
SELECT DATE_FORMAT(date, '%Y-%m') AS month,  
       SUM(total_laid_off) AS total_layoffs  
FROM layoffs  
GROUP BY month  
ORDER BY month DESC  
LIMIT 100;
```

month	total_layoffs
2025-02	10460
2025-01	2403
2024-12	2268
2024-11	6455
2024-10	3659
2024-09	3941
2024-08	25944
2024-07	9051
2024-06	10083
2024-05	11011
2024-04	22423

-- To Find Companies with Highest Percentage of Layoff

```
SELECT company, percentage_laid_off  
FROM layoffs  
WHERE percentage_laid_off IS NOT NULL  
ORDER BY percentage_laid_off DESC  
LIMIT 10;
```

company	percentage_laid_off
Advisor Credit Exchange	1
Brave Care	1
Epicery	1
Lilium	1
Cushion	1
Level	1
BionicHIVE	1
Pandion	1
Bench	1
Alza	1

3. Effect of Funding on Layoffs

- Companies with high funding still had layoffs, which may indicate:
 - Inefficient capital use.
 - Strategic restructuring despite available funds.
 - Market overvaluation leading to downsizing.
- Some layoffs occurred shortly after funding rounds, raising concerns about management decisions and investor influence.

-- To Find the Impact of Funding on layoffs

```
SELECT company, funds_raised, total_laid_off
FROM layoffs
WHERE funds_raised IS NOT NULL
ORDER BY funds_raised DESC;
```

company	funds_raised	total_laid_off
Netflix	121900	150
Netflix	121900	300
Netflix	121900	30
Netflix	121900	25
Xerox	27200	3000
Meta	26000	3600
Meta	26000	0
Meta	26000	0
Meta	26000	11000
Meta	26000	0
Meta	26000	10000
Uber	25200	200
Uber	24700	60
WeWork	22200	300

-- To Find layoffs by stage.

```
SELECT stage, SUM(total_laid_off) AS total_layoffs
FROM layoffs
GROUP BY stage
ORDER BY total_layoffs DESC;
```

stage	total_layoffs
Post-IPO	361046
Unknown	53282
Acquired	51209
Series B	24025
Series C	22549
Series E	19083
Series D	16946
Series F	9610
Private Equity	8835
Series H	7347
Subsidiary	7288
Series A	6545
Series G	2083
Seed	1946

-- ===== ADVANCED ANALYSIS WITH WINDOWS FUNCTIONS =====

1. Tracking cumulative layoffs over time to observe trends (Windows Function).

```

WITH Layoff_Trend AS (
    SELECT date, SUM(total_laid_off) AS daily_layoffs
    FROM layoffs
    WHERE total_laid_off IS NOT NULL
    GROUP BY date
)
SELECT date,
       daily_layoffs,
       SUM(daily_layoffs) OVER(ORDER BY date) AS cumulative_layoffs
FROM Layoff_Trend;

```

	date	daily_layoffs	cumulative_layoffs
►	2022-01-08	0	0
	2022-01-20	330	330
	2022-01-26	180	510
	2022-02-03	57	567
	2022-02-07	0	567
	2022-02-08	2800	3367
	2022-02-10	198	3565
	2022-02-14	119	3684
	2022-02-16	100	3784
	2022-02-17	120	3904
	2022-02-21	261	4165
	2022-02-24	30	4195
	2022-02-25	0	4195
	2022-03-01	190	4385

Result 14 x

2. Identify Companies that had layoffs in consecutive MONTHS (using Windows Function and LAG)

-- CTE (Monthly_Layoffs) aggregates total layoffs by company and month and converts dates into year-month format

```
WITH Monthly_Layoffs AS (  
    SELECT company,  
           DATE_FORMAT(date, '%Y-%m') AS month,  
           SUM(total_laid_off) AS total_layoffs  
    FROM layoffs  
    WHERE total_laid_off IS NOT NULL  
    GROUP BY company, month  
)  
SELECT *  
    FROM (  
        SELECT company, month, total_layoffs,  
               LAG(month) OVER (PARTITION BY company ORDER BY month) AS  
                   prev_month  
        FROM Monthly_Layoffs  
    ) subquery -- subquery applies LAG(month) to compute the previous month for each company  
WHERE prev_month IS NOT NULL; -- we cannot use WHERE in the subquery section
```

	company	month	total_layoffs	prev_month
▶	100 Thieves	2023-01	0	2022-07
	23andMe	2023-08	71	2023-06
	23andMe	2024-11	200	2023-08
	2TM	2022-09	100	2022-06
	2U	2023-09	0	2022-07
	2U	2024-01	0	2023-09
	2U	2024-12	0	2024-01
	7Shifts	2024-01	68	2023-09
	8x8	2023-01	155	2022-10
	98point6	2024-04	0	2022-07
	Absci	2023-09	30	2022-08
	Ada	2023-02	0	2022-09
	Affirm	2023-02	500	2022-11
	Affirm	2024-02	60	2023-02

Result 17 ×

-- ===== Self-join =====

3. Examine whether companies that raised funds experienced layoffs before or after the event.

```

SELECT l1.company,
       l1.date AS layoff_date,
       l2.date AS funding_date,
       l2.total_laid_off,
       l2.funds_raised,
       DATEDIFF(l1.date, l2.date) AS days_difference
FROM layoffs l1
JOIN layoffs l2
      ON l1.company = l2.company
AND l2.funds_raised IS NOT NULL
WHERE l1.total_laid_off IS NOT NULL
ORDER BY company, days_difference
LIMIT 1000;

```

	company	layoff_date	funding_date	total_laid_off	funds_raised	days_difference
►	Included Health	2022-07-25	2022-07-25	0	272	0
	&Open	2022-11-17	2022-11-17	9	35	0
	#Paid	2023-01-27	2023-01-27	19	21	0
	100 Thieves	2022-07-13	2023-01-10	0	120	-181
	100 Thieves	2023-01-10	2023-01-10	0	120	0
	100 Thieves	2022-07-13	2022-07-13	12	120	0
	100 Thieves	2023-01-10	2022-07-13	12	120	181
	10X Genomics	2022-08-04	2022-08-04	100	242	0
	23andMe	2023-06-09	2024-11-11	200	1100	-521
	23andMe	2023-08-08	2024-11-11	200	1100	-461
	23andMe	2023-06-09	2023-08-08	71	1100	-60

4. INDUSTRY LAYOFF TRENDS: Year-over_Year (CTE & WINDOWS FUNCTION)

-- To Show how layoffs in each industry changed compared to the previous year.

WITH Industry_Layoffs AS (

 SELECT industry,

 DATE_FORMAT(date, '%Y') AS year,

 SUM(total_laid_off) AS yearly_layoffs

 FROM layoffs

 WHERE total_laid_off IS NOT NULL

 GROUP BY industry, year

)

SELECT industry,

 year,

 yearly_layoffs,

 LAG(yearly_layoffs) OVER(PARTITION BY industry ORDER BY year) AS

 prev_year_layoffs,

 (yearly_layoffs - LAG(yearly_layoffs) OVER (PARTITION BY industry ORDER BY year)) AS yoy_change

FROM Industry_Layoffs ;

	industry	year	yearly_layoffs	prev_year_layoffs	yoy_change
▶	NULL	2023	35	NULL	NULL
	aerospace	2022	100	NULL	NULL
	aerospace	2023	497	100	397
	aerospace	2024	1314	497	817
	aerospace	2025	1000	1314	-314
	ai	2023	230	NULL	NULL
	ai	2024	58	230	-172
	ai	2025	25	58	-33
	construction	2022	433	NULL	NULL
	construction	2023	100	433	-333
	construction	2024	0	100	-100

Result 20 ×

5. INDUSTRY LAYOFF TRENDS: Year-over_Year (CTE & WINDOWS FUNCTION)

-- To Show how layoffs in each industry changed compared to the previous year.

WITH Industry_Layoffs AS (

SELECT industry,

DATE_FORMAT(date, '%Y') AS year,

SUM(total_laid_off) AS yearly_layoffs

FROM layoffs

WHERE total_laid_off IS NOT NULL

GROUP BY industry, year

)

SELECT industry,

year,

yearly_layoffs,

LAG(yearly_layoffs) OVER(PARTITION BY industry ORDER BY year) AS

prev_year_layoffs,

(yearly_layoffs - LAG(yearly_layoffs) OVER (PARTITION BY industry

```
ORDER BY year)) AS yoy_change
FROM Industry_Layoffs ;
```

	industry	year	yearly_layoffs	prev_year_layoffs	yoy_change
	ai	2025	25	58	-33
	construction	2022	433	NULL	NULL
	construction	2023	100	433	-333
	construction	2024	0	100	-100
	construction	2025	114	0	114
	consumer	2022	19856	NULL	NULL
	consumer	2023	30303	19856	10447
	consumer	2024	11224	30303	-19079
	consumer	2025	3800	11224	-7424
	crypto	2022	8263	NULL	NULL
	crypto	2023	5104	8263	-3159

Result 20 x

6. Workforce Reduction vs. Funding

- Companies were ranked based on **layoffs relative to workforce size and funding**.
- Some firms with **high funding had major layoffs**, highlighting **cost-cutting measures and operational adjustments**.

-- To Find Percentage of Workforce Laid Off vs. Funding Raised

-- To Rank companies based on their layoffs relative to workforce size by considering their fundings too

```
SELECT company,
       industry,
       total_laid_off,
       percentage_laid_off,
       funds_raised,
```

```

RANK() OVER(ORDER BY percentage_laid_off DESC) AS layoff_rank,
RANK() OVER(ORDER BY funds_raised DESC) AS funding_rank
FROM layoffs
WHERE total_laid_off IS NOT NULL AND percentage_laid_off IS NOT NULL
ORDER BY layoff_rank;

```

	company	industry	total_laid_off	percentage_laid_off	funds_raised	layoff_rank	funding_rank
▶	Britishvolt	transportation	206	1	2400	1	134
	Fisker	transportation	0	1	1700	1	194
	Deliveroo Australia	food	120	1	1700	1	194
	Lilium	aerospace	1000	1	1400	1	255
	Convoy	logistics	500	1	1100	1	327
	Lordstown Motors	transportation	0	1	1100	1	327
	BlockFi	crypto	0	1	1000	1	355
	Cue Health	healthcare	180	1	899	1	412
	Olive	healthcare	0	1	856	1	428
	SmileDirectClub	healthcare	0	1	694	1	535
	AppHarvest	food	0	1	692	1	536
	Bowery Farming	food	0	1	626	1	606
	MediaMath	marketing	0	1	607	1	622
	Veev	construction	0	1	597	1	632
	Shift	transportation	0	1	504	1	732
	FasvKnock	real estate	0	1	440	1	860

Result 21 x

7. Layoffs Across Multiple Locations

- Some companies **laid off employees in multiple locations**, indicating:
 - **Global restructuring.**
 - **Market-based workforce adjustments.**
 - **Cost-cutting strategies affecting different regions.**

-- To Identify Companies with Layoffs Across Multiple Locations (Using Self-join)

```

SELECT DISTINCT l1.company,
               l1.location AS location_1,

```

l2.location AS location_2

FROM layoffs l1

JOIN layoffs l2 ON l1.company = l2.company AND l1.location <> l2.location;

	company	location_1	location_2
►	Sonos	New York City	Santa Barbara
	Salesforce	Dublin	SF Bay Area
	Wayfair	Boston	Berlin
	Stoa	Phoenix	Bengaluru
	Just Eat	London	Amsterdam
	Jellysmack	Paris	New York City
	Fable	Toronto	New York City
	Bytedance	Shanghai	Jakarta
	IBM	Tel Aviv	New York City
	IBM	Beijing	New York City
	IBM	New York City	Beijing
	IBM	Tel Aviv	Beijing
	Loop	Washington ...	Columbus
	Loop	Austin	Columbus

Result 23 ×

Conclusion

This analysis clearly explains employee reductions, which helps stakeholders make data-driven decisions about employment policies, investments, and business strategies.