

# BREAK EVEN ANALYSIS

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## Breakeven Analysis

Two distinct uses of this expression:

1. *Breakeven Time* (aka *Payback Time*). How much calendar time would be required for an investment to be recovered from positive cash flow.
2. *Breakeven Quantity*. How many “units” (i.e., transactions, quantity of product, orders, customers) must we experience per unit time in order to cover our fixed costs?

(Sometimes referred to as “covering the nut.”)

## Breakeven Time / Payback Time

Most commonly used as a quick way to think about a lump-sum investment.

For instance,

What is the breakeven time for the conversion of our delivery trucks to use compressed natural gas instead of gasoline?



Photo: Wikimedia Commons (Comyu)



WHARTON

**Source:** Belle-V Kitchen

## Financial Sustainability – making and selling something

$$Q(p - c) > F$$

where

**Q**      **quantity** sold per unit time (e.g., 30,000 openers/year)

**p**      **price** per unit (e.g., 25.00 USD/opener)

**c**      **cost** per unit (e.g., 13.44 USD/opener)

**F**      **fixed costs** to operate the business per unit time (e.g., 300,000 USD/year)  
              rent, advertising, salaries, etc.

## Breakeven Quantity

$$Q = F/(p - c)$$

$$\begin{aligned} Q &= 300,000 / (25.00 - 13.44) \\ &= 25,952 \text{ units/year} (2,163 \text{ units/month}) \end{aligned}$$

where

**Q**      **quantity** sold per unit time

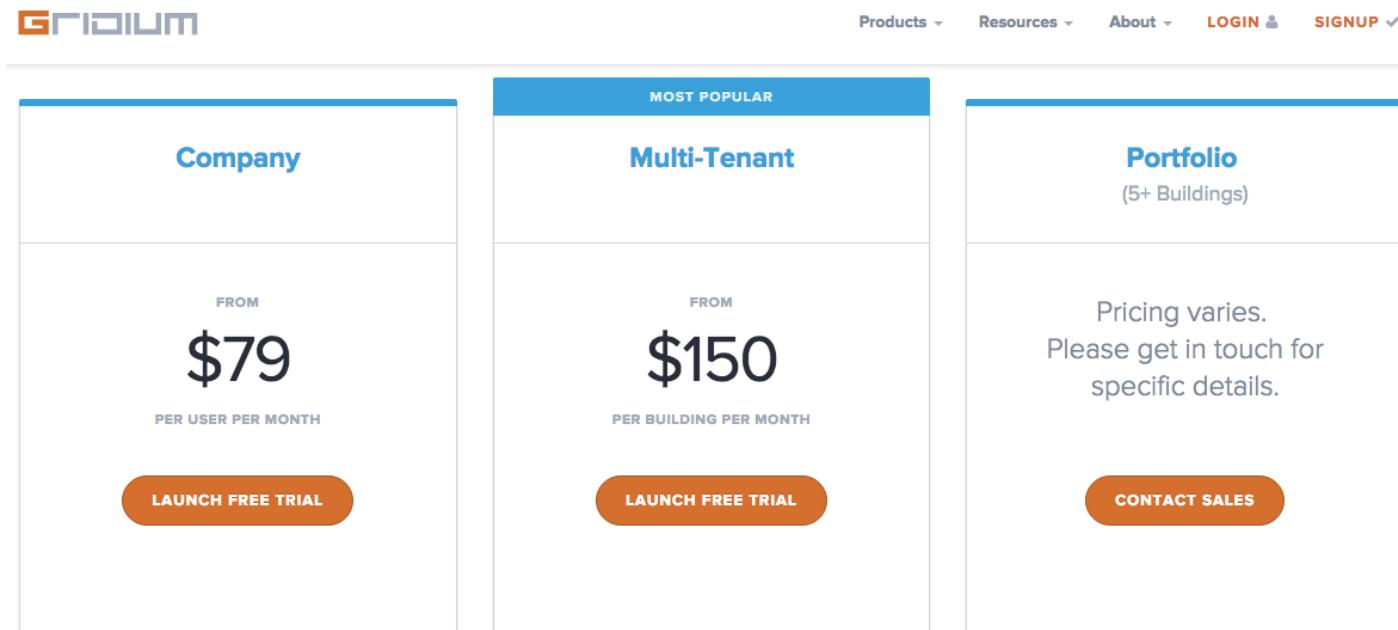
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# Breakeven for Recurring Services (e.g. SaaS)

monthly recurring revenue > fixed costs



The screenshot shows the Gridium pricing page. At the top, there's a navigation bar with the Gridium logo, a search bar, and links for Products, Resources, About, LOGIN, and SIGNUP. Below the navigation, there are three pricing plan cards:

- Company**: From \$79 per user per month. Includes a "LAUNCH FREE TRIAL" button.
- MOST POPULAR Multi-Tenant**: From \$150 per building per month. Includes a "LAUNCH FREE TRIAL" button.
- Portfolio (5+ Buildings)**: Pricing varies. Please get in touch for specific details. Includes a "CONTACT SALES" button.

#### These great features:

- ✓ Manage work orders
- ✓ Manage vendors
- ✓ Manage spaces

#### Everything in Company, plus:

- ✓ Unlimited users
- ✓ Manage tenants
- ✓ Gridium Hosted tenant portal

#### Everything in Multi-Tenant, plus:

- ✓ Custom domain mapping
- ✓ Custom SMS numbers
- ✓ Full-service onboarding

## Issues

- Breakeven assumes a fixed level of spending (e.g. payroll, advertising, rent).
- But, these costs are not really fixed – they typically vary somewhat depending on the overall scale of the business.
- So, breakeven calculations are often framed as

“If we were this size of an organization, how many units would we have to sell a month to breakeven?”

- Sometimes useful to do this analysis for the “minimum efficient scale” of the business.
- Helps to test intuition about how feasible a business concept is.