

BREAK EVEN ANALYSIS

Professor Karl T. Ulrich



@ktulrich



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

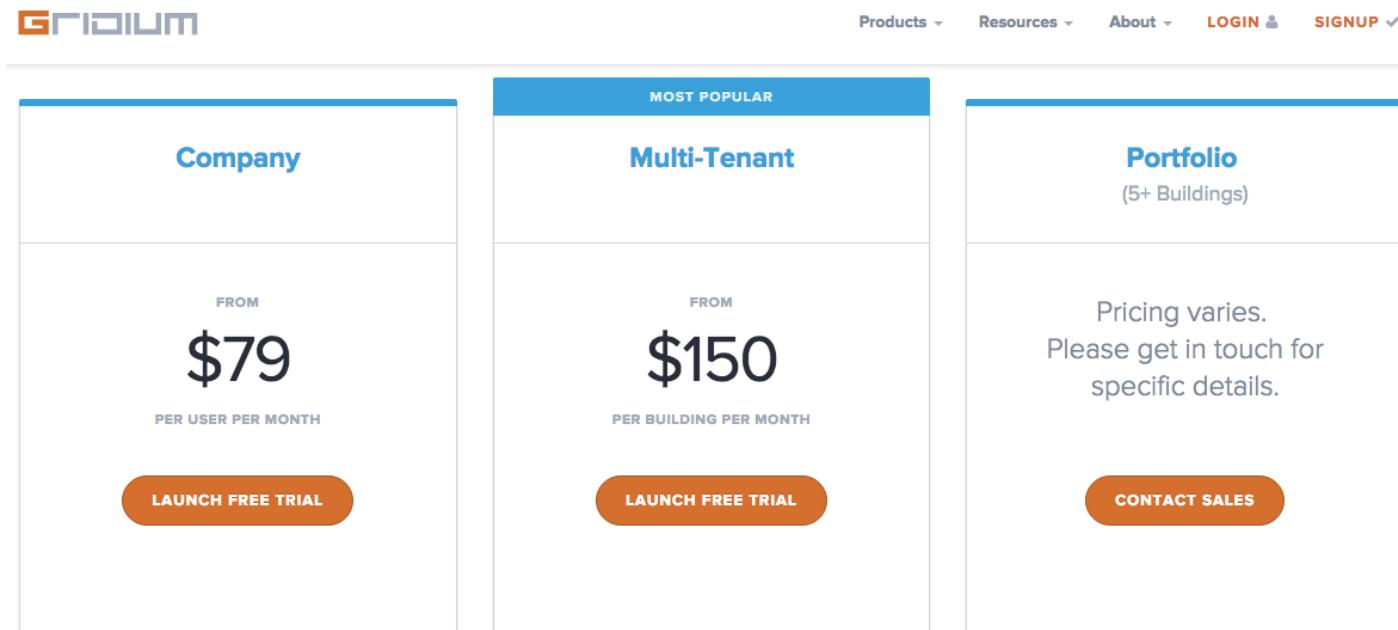
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Breakeven for Recurring Services (e.g. SaaS)

monthly recurring revenue > fixed costs



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

- 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.