



GROWTH THAT COMPOUNDS

Average revenue per user is a defined ratio, not customer value

ARPU is declared revenue divided by eligible users for a period or cohort. It only means what its numerator and denominator allow.

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MANAGEMENT SUMMARY

Average revenue per user, or ARPU, is declared revenue divided by eligible users for a named period or cohort. Its meaning depends on the revenue boundary and on whether the denominator counts users, accounts, seats, or customers. Kumar, George, and Pancras study cross-buying in retailing; Kamakura describes cross-selling and analytical targeting. Those sources provide bounded context, not a universal ARPU benchmark. This article gives a metric contract and synthetic examples that keep cohort entry, plan mix, maturity, and exclusions visible. ARPU describes average monetization under a stable boundary. It does not by itself measure customer value, margin, retention, cash recovery, or causal product performance.

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Average revenue per user is useful only when the word “user” and the word “revenue” have been made boringly precise.

ARPU is declared revenue divided by eligible users for a named period or cohort. It describes an average under that boundary. It does not become customer value, margin, retention, or product quality because the quotient is high.

The common failure is not arithmetic. It is substitution: recurring revenue becomes total revenue, users become accounts, a mixed calendar population becomes a cohort, and a changed number is called improvement without checking what changed in the measurement object.

What does ARPU actually calculate?

Write the metric in words before writing the formula:

ARPU = declared revenue in the period or cohort / eligible users under the same boundary

The numerator is not simply “revenue.” It might be gross billings, net revenue after credits, invoiced revenue, collected revenue, recurring revenue, or another declared amount. The denominator is not simply “customers.” It might be active users, paying users, seats, accounts, or another unit. The period may be a calendar month, a billing cycle, a cohort age, or a named observation window.

If those choices are not written beside the number, the calculation can be reproducible in code and still be uninterpretable in a decision.

Which revenue and user boundaries should be declared?

At minimum, record:

- revenue type and exclusions;
- currency and whether taxes, credits, refunds, and discounts are included;
- eligible unit and the rule for active, paying, or entitled status;
- period start, period end, and time zone;
- if a cohort boundary is used, cohort entry event and maturity rule;
- treatment of new, returning, suspended, or deactivated users; and
- whether the metric is descriptive, forecast, or used as an intervention outcome.

This is a measurement contract, not an accounting standard. A company may choose a different contract for different decisions. It must not compare the outputs as if the contracts were the same.

The cohort-analysis article owns age-relative population comparison. The NRR article owns the fixed-customer-cohort boundary for recurring revenue retention. ARPU can be used beside both, but it does not replace either.

Why is ARPU not the same as customer value?

ARPU averages revenue. Customer value usually requires additional objects: contribution margin, service burden, retention or survival, expansion, acquisition cost, cash timing, and a forecast horizon. Two cohorts can have the same ARPU and different margin or retention paths. One can have higher ARPU because it contains more large accounts, not because the offer improved for a typical user.

The distinction is already present in the glossary's neighbouring constructs. Customer lifetime value is a forecast of future contribution under a declared model. Customer profitability assigns revenue and cost under a declared boundary. ARPU does neither on its own.

The CAC article owns acquisition-cost boundaries, and the CAC-payback article owns the recovery-time question. A higher ARPU can improve those calculations under a stable cost and cohort boundary, but it does not prove that it did.

How do cross-buying and cross-selling affect ARPU?

Kumar et al. (2008) study cross-buying in retailing. Their object is the purchase of additional products by existing customers, with drivers and consequences that can increase revenue contribution. More specifically, the study uses transaction histories from non-contractual catalog retailing, a 1997 first-purchase cohort, seven product categories, and separate calibration and validation samples. The setting and model boundary matter: this is a retail customer-behaviour study, not a universal ARPU benchmark or a general SaaS growth law.

Kamakura (2008) describes cross-selling as offering the right additional product to the right customer at the right time, and discusses share of wallet, relationship breadth, retention, and analytical targeting. A prospect score can help select whom to approach. It is not realised revenue per user, and an offer is not a purchase until the purchase event and revenue boundary are observed.

The useful separation is:

- cross-selling is an offer or selling action;
- cross-buying is a purchase behaviour by an existing customer;
- ARPU is a revenue-per-eligible-unit ratio; and
- customer value is a broader outcome or forecast object.

Cross-buying and cross-selling can change ARPU. They do not make the ratio a measure of their own profitability or of the relationship's quality.

Which cohort and mix changes can move ARPU?

Table 1 The ARPU boundary worksheet

Metric object	Numerator under named metric	User denominator	Period or cohort	Synthetic arithmetic	What it cannot answer
All-user ARPU	EUR 48,000 net recurring revenue	1,000 eligible users	One declared month	EUR 48,000 / 1,000 = EUR 48	Whether users are profitable or retained
Paying-user ARPU	EUR 48,000 net recurring revenue	600 eligible paying users	Same month, narrower denominator	EUR 48,000 / 600 = EUR 80	Whether eligibility changed the comparison
Cohort A ARPU	EUR 24,000 net recurring revenue	400 users in Cohort A	Same month, fixed entry event	EUR 24,000 / 400 = EUR 60	Why Cohort A has a different mix
Cohort B ARPU	EUR 24,000 net recurring revenue	600 users in Cohort B	Same month, fixed entry event	EUR 24,000 / 600 = EUR 40	Whether age or acquisition route caused the gap
Cross-buying line	EUR 8,000 additional product revenue	1,000 eligible users	Same month and base population	EUR 8,000 / 1,000 = EUR 8	Whether the line increased contribution or retention
Contribution per eligible user, not ARPU	EUR 30,000 contribution after declared costs	1,000 eligible users	Same month and base population	EUR 30,000 / 1,000 = EUR 30 contribution per eligible user	Whether it can be compared with ARPU or whether the cost boundary is complete

Author's synthetic ARPU worksheet grounded in Kumar, George, and Pancras (2008) and Kamakura (2008). Revenue, user counts, and ratios are illustrative arithmetic, not company data or benchmarks.

The table is not a benchmark. It is a reminder that the same EUR 48,000 numerator can produce EUR 48 or EUR 80 depending on which users are eligible. The cohort examples also hold the revenue total constant while changing the denominator. The final row is a companion metric, not an ARPU observation: contribution after costs must not be compared with a revenue numerator without a declared bridge. This is arithmetic, not evidence that one cohort is better.

Which ARPU comparisons are fair?

Compare ARPU only when the following are aligned:

- 1 the same unit and user-eligibility rule;
- 2 the same revenue definition, currency, and credit treatment;
- 3 the same period or the same age since cohort entry;
- 4 the same maturity and treatment of suspended or new users;

- 5 the same plan, geography, channel, and product boundary; and
- 6 a documented reason for any changed definition.

If a team moves from account-based to user-based reporting, both can be useful. The new figure is a new metric object. It should not be described as a trend break or product improvement until the changed unit and comparison are handled explicitly.

Can ARPU be a management target?

It can be a diagnostic input, but a standalone target invites local optimization. A team can raise ARPU by changing the denominator, pushing a price increase, concentrating on large users, adding a paid feature, or excluding users who no longer fit the rule. Those moves may be legitimate. The ratio cannot tell you which one occurred.

Use ARPU beside the eligible-user count, cohort composition, revenue bridge, contribution margin, retention, and cash timing. If a target is required, define the decision it is meant to support and the failure modes that would make the target misleading.

What should accompany an ARPU number?

The minimum review card is:

- numerator and exclusions;
- denominator and eligibility rule;
- period, cohort entry, and maturity;
- plan, route, geography, and product composition;
- user count and any join or deduplication rule;
- contribution, retention, or cash companion metric; and
- definition version, owner, refresh trigger, and unresolved status.

That record preserves the useful job of ARPU. It also prevents a narrow average from being promoted to customer value, a cross-selling result, or a causal outcome that the data did not measure.

The defensible conclusion is narrow: ARPU is a defined ratio with a declared revenue boundary and a declared eligible-user denominator; the boundary may be a period or a cohort. Read it as average monetization under that contract, then bring in margin, retention, cost, cash, and cohort evidence before naming customer value or improvement.

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END OF ESSAY

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