Data-First ARR Reporting: An Operator's Guide

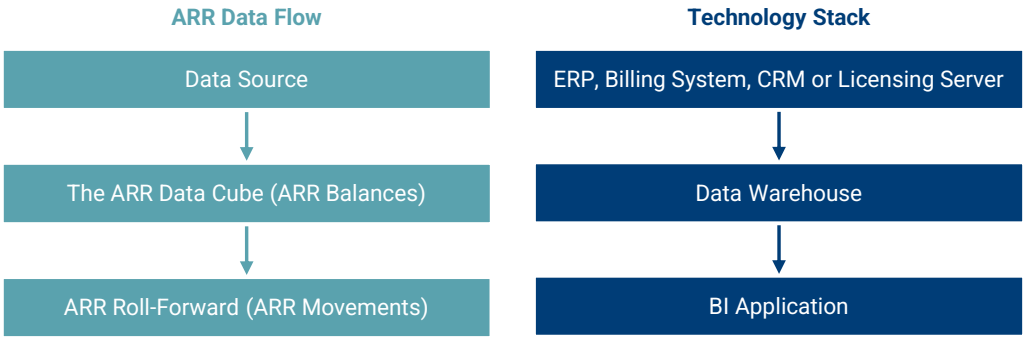
Creating and maintaining a modern, automated ARR data environment for Best-in-Class reporting

Introduction:

SaaS metrics are the lifeblood of software companies looking to grow and thrive in a competitive landscape. But, despite their significance, we often overlook the critical sources, processes, and technologies that generate the data that powers these metrics.

In this eye-opening whitepaper, we provide a roadmap to help you create and maintain a world-class ARR/MRR data environment, which is vital for making strategic decisions and boosting company valuations. Our team of experts, with over 100 years of collective experience building data environments, has crafted this practical guide for CFOs and operators alike.

So, if you're looking for a discussion on the "rule of 40", this isn't the place for you. But, if you want to unlock the true potential of your ARR/MRR data set, this paper provides the roadmap to building a best-in-class ARR reporting environment. Although we'll use ARR as our focal point, the takeaways are equally applicable to MRR businesses. Get ready to harness the power of your data!



Executive Summary:

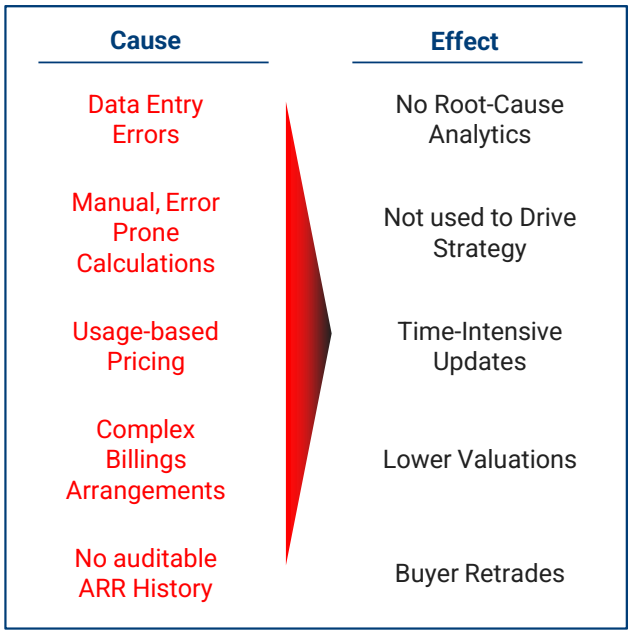
- CFOs should manage an ARR data cube and roll-forward with the same rigor as they approach their GAAP financial statements.
- Evaluate the pros and cons of leveraging the four potential data sources for ARR information.
- Select a data source that produces the seven required data elements for ARR and ensure data integrity and consistency across all functional areas that create this data.
- The functional areas that manage this data entry (e.g. deal desk, Sales Ops) should report to the CFO to ensure data integrity and consistency.
- With data integrity in place, an ARR Data Cube should be created in a data warehouse. Do not try and use operational applications (e.g., CRM, ERP, Billing System) to house your cube.

- Craft an ARR Roll-Forward based on the Data Cube that reflects the nuances of the revenue model and contractual relationships with clients.
- Take a deliberate, rules-based approach to currency treatment and definitions of ARR movements in the ARR Data Cube, and automate using standard business intelligence or data warehouse platforms.
- Expensive reporting applications are not necessary to have a best-in-class ARR Roll-Forward.

Following these recommendations can help CFOs optimize their ARR data and gain valuable insights into their company's financial performance.

The Problems with ARR Reporting:

Maintaining data integrity in ARR reporting is critical for software companies. The absence of an auditable and reliable ARR data set can lead to lower valuations, slower turnarounds, and buyer re-trades, which can be detrimental to companies looking to raise capital or be acquired. Underwriters will also refuse to include unreliable SaaS metrics in securities filings for companies on an IPO path. Moreover, management will not utilize ARR-related analysis to drive business outcomes if they believe the data is erroneous and lack reliable root-cause analytics.



Despite its importance, software companies struggle to create reliable ARR data sets due to the lack of a standard approach and the manual steps involved in typical processes. The proliferation of usage-based models and complex pricing structures has further complicated the challenge of transforming financial and operational data into ARR. This complexity makes it difficult for companies to maintain data integrity, making it harder for them to make strategic business decisions based on ARR metrics.

The Solution

To achieve a best-in-class ARR dataset, companies need to implement processes and technology with the same level of rigor as those designed to withstand a traditional financial audit. This starts with selecting the optimal data source and capturing the required information while managing a repeatable process that delivers the ARR data with integrity. It ends with an automated suite of ARR analytics that transforms finance resources from analysis builders into drivers of strategy. By building an **ARR Data Cube** and an **ARR Roll-Forward** using these methods, companies can optimize their ARR data and gain valuable insights into their company's financial performance.

What exactly is an ARR Data Cube?

For those who are not technically inclined, an ARR Data Cube is a representation of the ARR balance by client over time, with any additional dimensions required to analyze the data. The exhibit below shows an example with limited dimensions of customer and product. However, other common dimensions include price, quantity, region, and customer segment, depending on the needs of the company.

A 3-Month Snapshot on an ARR Data Cube

				ARR Movements in Month			
Customer Name	**Product**	**End of Month**	**ARR Balance**	**New ARR**	**Upsell**	**Downsell**	**Churn**
Customer 1	Product A	1/31/22	0	0	0	0	0
Customer 1	Product A	2/28/22	100,000	100,000	0	0	0
Customer 1	Product A	3/31/22	100,000	0	0	0	0
Customer 2	Product A	1/31/22	50,000	0	0	0	0
Customer 2	Product A	2/28/22	50,000	0	0	0	0
Customer 2	Product A	3/31/22	50,000	0	0	0	0
Customer 2	Product B	1/31/22	10,000	0	10,000	0	0
Customer 2	Product B	2/28/22	10,000	0	0	0	0
Customer 2	Product B	3/31/22	10,000	0	0	0	0
Customer 3	Product A	1/31/22	75,000	0	0	0	0
Customer 3	Product A	2/28/22	60,000	0	0	(15,000)	0
Customer 3	Product A	3/31/22	60,000	0	0	0	0
Customer 4	Product B	1/31/22	25,000	0	0	0	0
Customer 4	Product B	2/28/22	25,000	0	0	0	0
Customer 4	Product B	3/31/22	0	0	0	0	(25,000)

With a proper data cube, the ARR Rollforward is simple to construct. The challenge is getting the proper data into the cube and maintaining the integrity of the cube over time. Below is a simple Rollforward based on the sample data above:

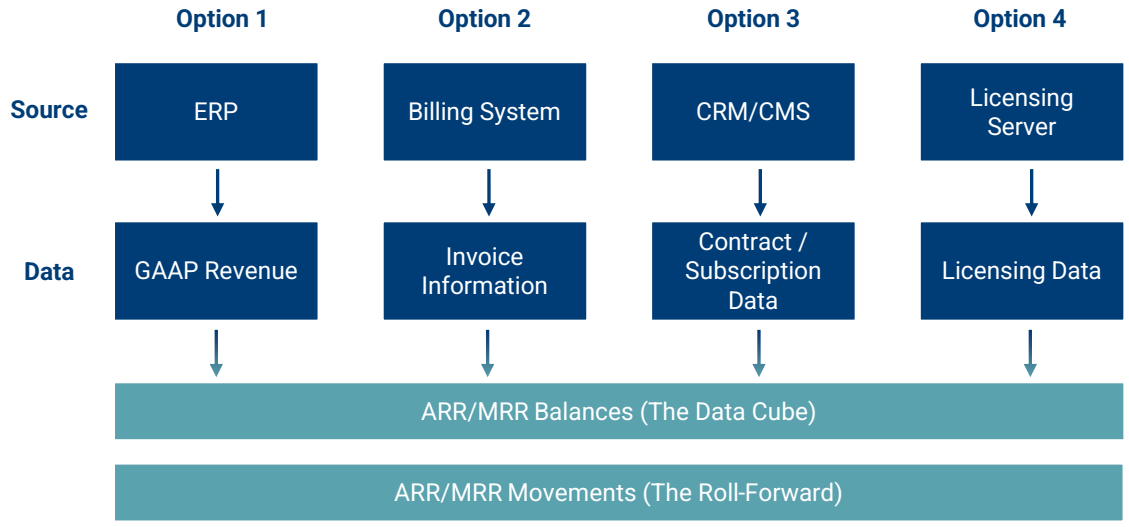
The ARR Rollforward

Total ARR	1/31/22	2/28/22	3/31/22
Beginning ARR	150,000	160,000	245,000
New ARR	0	100,000	0
Upsell	10,000	0	0
Downsell	0	(15,000)	0
Churn	0	0	(25,000)
Ending ARR	160,000	245,000	220,000

Data Source Alternatives for Building an ARR Data Cube:

In our experience, companies generally select from 4 primary sources to serve as the basis for their ARR reporting. To select the optimal data source, companies should evaluate the pros and cons of each source and determine which source(s) produce the seven required data elements for ARR.

Four Common Approaches to Building ARR



Let's briefly discuss each of these approaches, and the pros and cons of each approach.

Option 1: ERP & GAAP Revenue data

This approach is typically used when there is minimal deviation from month-to-month revenue within a client base, or when other data sources are not reliable. The monthly revenue data from the ERP is annualized into ARR and normalized by making manual adjustments to account for GAAP revenue timing/other one-time issues that may distort monthly revenue from being a true run-rate figure.

Pros:

- Starting with GAAP revenue allows the company to leverage the discipline of the revenue recognition process, which must be robust to produce auditable financial statements.
- It is easy to reconcile ARR to GAAP revenue because GAAP revenue is the original source of the ARR values.

Cons:

- GAAP revenue (especially if compliant with ASC 606) may not be a reliable representation of current ARR. GAAP revenue recognized in a given month may require significant manual adjustments to transform it into an accurate ARR figure. For example, GAAP rules may require all or part of a revenue stream to be recognized upfront, even though a customer may be on a subscription plan (e.g., term licenses), thus creating a gap between GAAP revenue recognized and subscription value in a particular period.
- In many cases, contract details are lacking in the ERP (e.g., unit price, quantity, product type) – this makes it difficult to understand the root cause of ARR changes and requires a secondary data source to analyze ARR by segment or product.
- Monthly accounting adjustments for timing, credit memos, and catch-up adjustments can provide false signals of upsell and downsell, impairing the clarity provided by the ARR Roll-Forward.
- The manual entry of data in Excel to transform revenue into ARR each month lacks controls and data integrity, and record-keeping depends on individual discipline.

Option 2: Billing System & Invoice Information

For companies that invoice for ongoing subscriptions, the billing system often has the information required to drive ARR calculations.

Pros:

- Billing information is a reliable source of truth: If your invoice is incorrect your clients will certainly let you know!
- Invoices often contain product, price and unit information – allowing for ARR analytics like retention by product, and the breakout of upsells into pricing impact vs. unit increases.
- Revenue from usage-based pricing models will be captured in the billing system – allowing for one source of truth for ARR.

Cons:

- Billing information often lacks key information like renewal dates and start dates.
- Delayed invoices give a false signal of churn – though this signal could indicate problems in the billing process.
- Depending on the pricing model, initial invoices may not contain the required information to understand the run-rate ARR of the overall contract.

Option 3: CRM or contract management System ("CMS")

For companies with complex or non-standard customer agreements, ARR calculations may require data points not found in the ERP or billings system. In many cases this data is input in the CRM/CMS, which feeds an ARR analytics layer (The CRM and CMS are not built to house ARR data cubes – trust us – best practice is to not try and force your CRM to be a data warehouse).

Pros:

- Multiple customizable fields can be used to capture the multitude of data required to calculate ARR with non-standard contracts or complex billing arrangements.
- Disciplined data capture can feed multiple downstream processes – billing, revenue recognition, commissions and all benefit from reliable contract information correctly entered into a CRM/CMS.

Cons:

- This approach requires discipline and documented processes to ensure data entry is correct. A deal desk provided with appropriate resources from the CFO and other key stakeholders can ensure sales resources are correctly recording transactions.
- The CRM data is difficult to reconcile to GAAP revenue because most revenue processes are disconnected from the CRM. Accounting cannot rely on the inputs outside their control to get through an audit.
- CRMs typically lack the ability to integrate usage data to reflect in ARR. As companies continue to move toward usage-based pricing, this limitation becomes increasingly problematic, forcing them to rely on error-prone and manual processes.

Option 4: Licensing Server

Companies with standard licensing agreements and automated activation/invoicing systems can use such platforms (such as a Licensing Server) as a source to derive ARR. This source is particularly common in Product-Led Growth and B2C SaaS businesses, where transactions are commonly entered by the customer directly.

Pros:

- The licensing data set usually contains most of the fields required for ARR reporting, including start and end dates, user data, and quantity.
- The licensing data likely feeds GAAP revenue recognition processes, facilitating the reconciliation of GAAP revenue to ARR.

Cons:

- The licensing server may not include full segmentation data on desirable dimensions, such as region or customer segment, requiring integration of additional data sources.
- White-label licensing and authentication services often exclude pricing information in license data. Customization may be required to capture that critical piece of data.
- There may be a delay between a "booking" and a license activation in the server, causing new sales in a period to not be captured in the correct month in an ARR Roll-Forward.

Best Practices: Building and Maintaining the ARR Data Cube

Once the optimal data source is selected, the cube can be constructed. There are 4 considerations regarding the required attributes of the cube and its ongoing maintenance:

1. Data Requirements: First, the cube must contain seven core data elements to calculate and analyze ARR movements:

1. Customer Identifier
2. Start Date
3. Expiration Date (Renewal Date)
4. Units Sold
5. Unit Price in Native Currency (Including Discounts)
6. Product Identifier
7. Segmentation Data (e.g. SMB vs. Enterprise)

Certain situations may require integration of multiple data sources. To do this, create common identifiers across the data sources to allow for automated data aggregation.

2. Data Integrity: To maintain data integrity, it is recommended that the data source producing the seven data elements be managed by a team reporting to the CFO. This ensures that the CFO has ownership and control over the integrity of the ARR data.

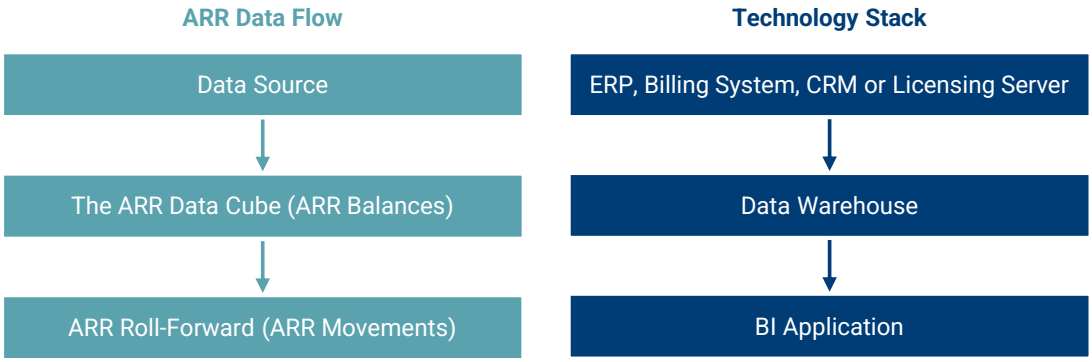
3. Booked ARR vs Active ARR: Companies with a significant lag time between bookings and full run-rate revenue should consider having two views of ARR: a "Booked" view that shows the full contract value on day 1, and an "Active ARR" view based on the billable amount after implementation or as the customer activates units over time.

4. Constant Currency ARR vs Booked Currency ARR: Companies billing in multiple currencies should consider how to treat FX rates. A "Constant Currency" view updates the value of non-native currencies each month, showing the FX impact as a separate line in the Roll-Forward. This view may distort gross and net retention calculations but gives an accurate view of the ARR in current exchange rates. Alternatively, reflecting currency exchange rates at the time of booking provides a better view for gross and net retention trends. Companies can capture data elements to have both views of the FX impact on ARR.

Once decisions are made around data sources and cube attributes, the information can be fed into various data warehouse solutions to create the ARR Data Cube. A well-constructed cube allows for easy integration and application of any desired dimensionality and segmentation.

Best Practices: Building the ARR Roll-Forward from the ARR Data Cube

Once a trustworthy ARR Data Cube is in place, building the monthly ARR Roll-Forward can be done easily by coding changes in the 7 data elements within the data warehouse. It is recommended to do this within the data warehouse instead of manually in Excel to maintain data integrity. BI tools such as Tableau, Looker, or PowerBI can be used to create segmented visualizations and reporting on top of the computations generated from the data warehouse. This will save time for the finance team and reduce errors compared to manually compiling analytics in Excel. Moreover, the Roll-Forward in a BI tool can refresh automatically or on-demand with a single click once properly built.



The final step to building the ARR Roll-Forward is to develop definitions to govern the categorization of changes to ARR:

Starting ARR	• Prior Month Ending Balance • Balance 12 months prior in annual view
New ARR	• Is a new product to existing customer categorized as new or upsell? • Is cross-sell its own category? Part of new/ upsell? • If a churned customer comes back is that new ARR or Recapture ARR?
Upsell / Expansion ARR	• IsIs it possible/useful to break out price vs. quantity increases? • What is the policy for translating usage-based revenue into ARR? • On what time scale is a deal considered "new" vs. "expansion" (1 year, 2 years, etc.)?
Downsell / Contraction ARR	• (considerations mirror Upsell/Expansion)
Churn	• Is a lost product to a continuing customer categorized as churn or downsell? • Is churn measured at a legal entity level or are parent company hierarchies utilized? • What event defines Churn? Cancellation notice? End of subscription?
Ending ARR	• The summation of the 5 items above

Note that building your ARR Roll-forward in a data warehouse and BI tool combination allows for full customization of ARR movements to best reflect the realities of your revenue base and contractual arrangements. SaaS reporting applications do not have the flexibility to accommodate the myriad of revenue models, potential data sources and requirements to customize ARR Movements.

The Take-aways

- ✓ Investing in a robust ARR reporting environment can yield significant benefits for software companies. By treating ARR reporting with the same rigor as financial reporting, companies can ensure the integrity and accuracy of their ARR data.
- ✓ It is recommended that the CFO own and manage the entire "stack" of applications, people, and processes involved in ARR reporting.
- ✓ Automating data feeds from source systems with rigorous control processes and building an ARR Data Cube in a data warehouse can facilitate the creation of a dynamic ARR Roll-Forward that reflects the unique elements of a company's revenue model and customer behavior.
- ✓ By leveraging business intelligence tools, finance teams can quickly and accurately analyze changes and validate data integrity. This allows them to uncover trends in retention rates, understand product upsell/downsell trends, and prioritize sales and service resources.
- ✓ By freeing teams from error-prone, manual ARR reporting, companies can run fast, competitive M&A and capital raise processes and ensure underwriter confidence in SaaS metrics. Ultimately, a robust ARR reporting environment can position the finance function to become a driver of strategy.

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About LevelUp Finance

LevelUp builds automated reporting environments for leading software companies. We work within our clients' existing infrastructure to build tailored, persistent and scalable reporting and analytic environments at half the cost and in a third of the time.

CFO's at our partners free their teams from manual, mundane workflows to become drivers of strategy, leveraging insightful analytics to advise leadership and deliver best-in-class board reporting. We call this Data-First Finance.

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