

## SapphireZ™ AI Budget Analytics

**7 of 10 executives surveyed say they only have moderate to low confidence in their budgets!**

This result is across companies regardless of size or having budgeting, BI, and data visualization tools.

Lack of confidence breeds sleepless nights and staff spending days to explain each month/quarter why performance is off from budget, who's to blame, and who's responsible to fix it. A brutal, primitive, and in today's world of AI, an unnecessary process.

Welcome to the next generation of Aurora's AI-Enabled analytics that retains the valuable exercise of the budget process **AND achieves a budget that can breed high confidence.**

### SapphireZ AI Budget Analytics

Sapphire is the precious stone associated as the bestower of truth and gift of prosperity and sets the theme for the Aurora SapphireZ™ AI Budget Analytics that delivers an **unbiased** AI forecast of the top line to which all expenses are driven.

Humans are naturally **biased**, so our budgets match what we want/need the future to be. This is an inescapable fact of who we are. SapphireZ's analytics gives an unbiased forecast comparison to mitigate our nature and inform us to better decisions for better planning.

SapphireZ is a specialized **Center of Analytics Excellence (COAE)** that has the people with the skills and platform to utilize AI and analytics, so you don't have to hire specialized talent or onboard software or need IT support.

Aurora's Insight Consultants apply AI and advanced analytics to prepare budgets/rolling forecasts to **Compare-and-Contrast** the with your budget, then deep dive to reveal opportunities and risks to business performance and plan. Each trimester, Aurora leads the discussion on analytics insights and its impact on the budget and business.

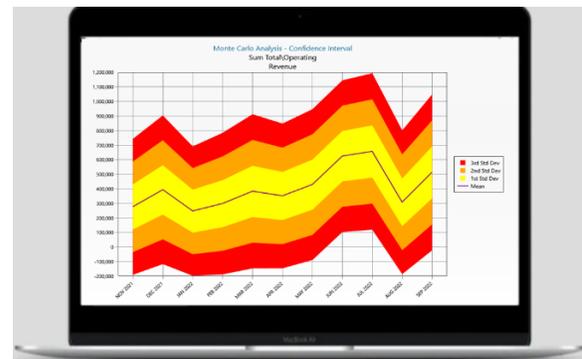
### How SapphireZ Works

AI and statistical forecasts/predictions produce a detailed forecast to compare to your budget.

A Monte Carlo Simulation is next used to express the forecast "risk" through a probable range of outcomes. It calculates the uncertainty in your business *if you continue the same course.*

Rather than a single improbable forecast value, MC provides a probable range of values based on the statistical volatility in your business, department, SKU, etc.

MC transforms the point forecast value into a planning range with best/worst case scenarios, as seen in the figure below. MC shows the risk profile in the forecast.



The central line is the forecast, and the yellow band the 1<sup>st</sup> confidence interval that represents a 68% probability the future will fall in this band and offers a "planning" range.

The business can compare its budget to the MC profile. For example, a budget in the orange band has only a 14% probability of occurrence.

MC evolves planning to a range. If the future falls in the yellow band, the monthly/quarterly laborious exercises to explain deviations to a single budget forecast is avoided, and only done if the actual value falls outside the planning band.

### SapphireZ Compare & Contrast

SapphireZ creates an advanced time series view to the future. The image below shows the green revenue budget area wedged between the black AI generated forecast for the current year and the blue actual outcome for the prior year.

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When budgets are expressed as equally distributed monthly amounts, the relevance for monthly or quarterly comparison to results is materially diminished, as seen in the above chart. As such, without a seasonal expression of the budget, there is no useful comparison to actual results.

SapphireZ's AI forecasts account for seasonality and assure more accurate budgets that have comparative value across the year.

The next step to better budgets/rolling forecasts are detail comparisons to show both where budgets and analytics forecasts are aligned and not. Alignments give confidence, and contrasts give pause for thought. The figure below shows a typical comparison where about two-thirds of revenue areas are relatively aligned, and a third not.

	2022	2023	2022 vs 2023 Variance	2022 vs 2023 % Variance	2023 Plan	2022 vs Plan Variance	2022 vs Plan % Variance
All Lighting	1,001,749	687,876	313,873	45.63%	800,000	201,749	25.22%
Blends	2,889,449	5,855,246	(2,965,797)	102.65%	2,652,242	236,207	9.67%
Emergency Lighting	32,394	348,792	(316,398)	109.72%	294,832	31,560	104.42%
Fibered Lighting Leds	303,838	305,442	1,604	1.02%	327,000	(23,162)	(7.04%)
LED Automotive	2,428	1,704	724	42.67%	2,000	428	17.44%
Manufacture	952,563	1,852,094	(899,531)	197.96%	1,448,850	(503,287)	(35.06%)
Isaon	415,930	353,292	62,638	17.73%	353,000	62,930	17.84%
New Age Commercial	13,695	5,240	8,456	165.58%	5,000	8,695	173.90%
New Age Home	1,418,597	294,006	1,124,592	182.51%	1,200,000	218,597	18.23%
Optical Reflector	800,000	1,090,707	(2,907,007)	(74.12)%	1,148,273	(148,273)	(13.52)%
Optical Reflector	5,461	12,496	(9,035)	(72.12)%	20,000	(14,539)	(82.79)%
R&D Grants	305,401	191,842	113,559	59.19%	386,000	(80,599)	(20.89%)
Special Device Lights	483,136	228,159	255,143	110.91%	450,000	33,136	6.91%
Total	8,020,022	12,898,718	(4,878,696)	163.99%	6,865,980	1,154,742	(17.04%)

During SapphireZ sessions, Aurora's Insight Consultants guide discussions to probe contrasts that sparks thinking to challenge if the budget is a human desire/need for a future outcome or based on human knowledge of certain events of the future that can deliver the budget.

**Compare-and-Contrast *always* makes more accurate budgets with higher confidence that the budgets are attainable.**

### Fair Challenge

After the budget is done the CEO asks for more revenue. Pushback is often futile because there are little quantitative arguments. The remaining decision is whether to allocate the stretch equally or proportionally to the affected groups.

Now, introduce Fair Challenge, advanced predictive analytics to calculate the probability of the stretch. For example, Fair Challenge may determine, say, an 18% probability of achieving a \$10m increase in revenue. For the first time, there is a quantitative and unbiased assessment to the requested task.

Fair Challenge may dissuade the CEO or cause the reduction of the stretch to an amount that has a higher probability. When a decision is made to proceed, it's done with analytics insights and the allocation of the stretch is calculated to produce the same probability for each participant – thus a "Fair" challenge to all participants.

### Delivery

SapphireZ is offered as an annual subscription, and easily delivered over the web. No travel, no hardware, no software, no added costs, no worries.

### Learn More About Digital Transformation

The groundbreaking book is for every executive to give vision, voice, and clarity to the value of analytics and how to implement an AI-Enabled analytic culture of data driven decisions.

