
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

BSI401

Build insightful dashboards through advanced calculations with Amazon QuickSight

Emily Zhu

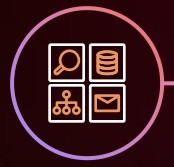
Senior Product Manager
Amazon QuickSight

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Agenda



Why calculations matter?

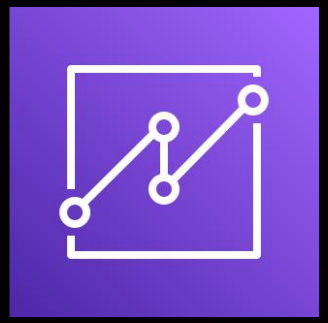


What are the new functions we launched this year?



Interactive demo time!

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Amazon QuickSight

UNIFIED BI SERVICE AT HYPERSCALE

Unified BI for all your analytics needs

Build data-rich experiences fast

Consistent high performance with auto scale

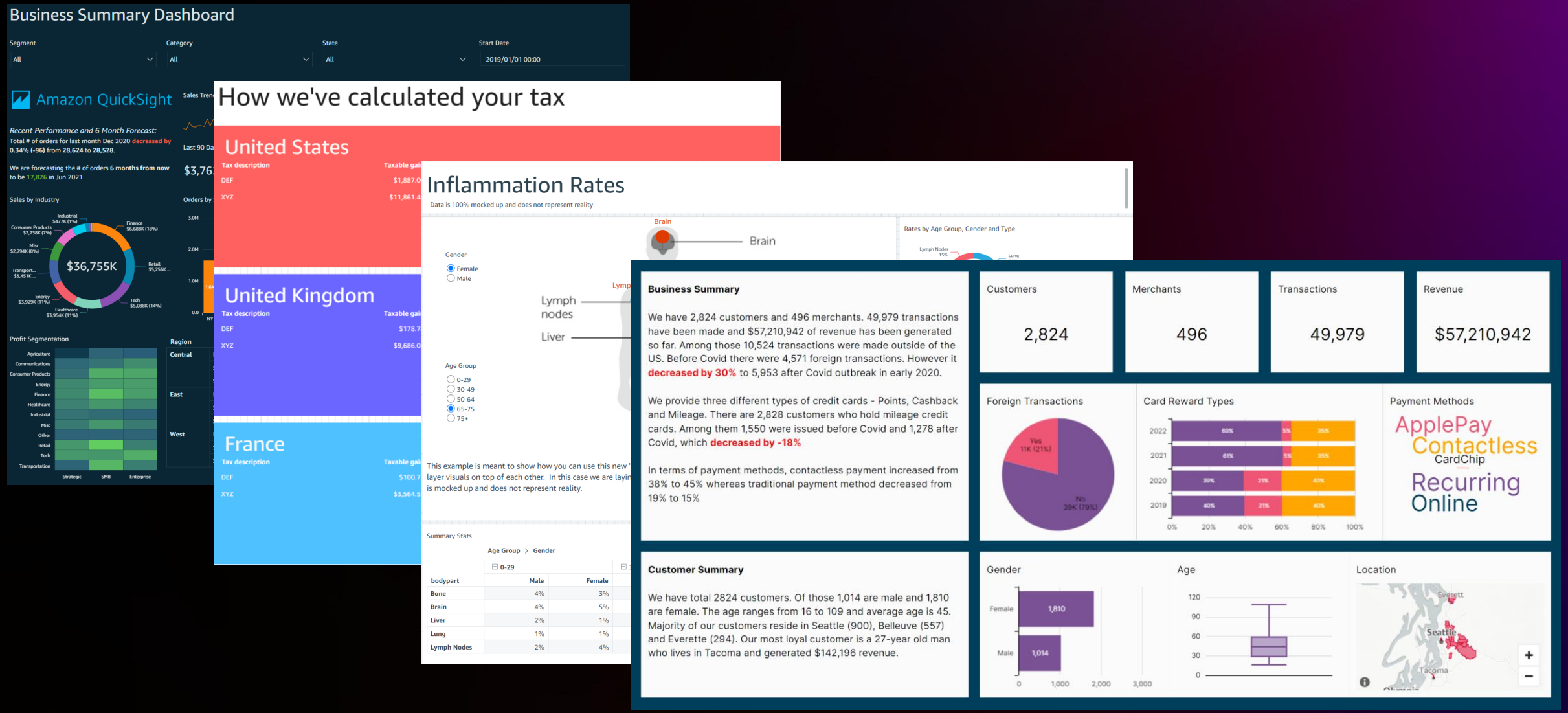
Lower costs with consumption-based pricing

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Why calculations matter?

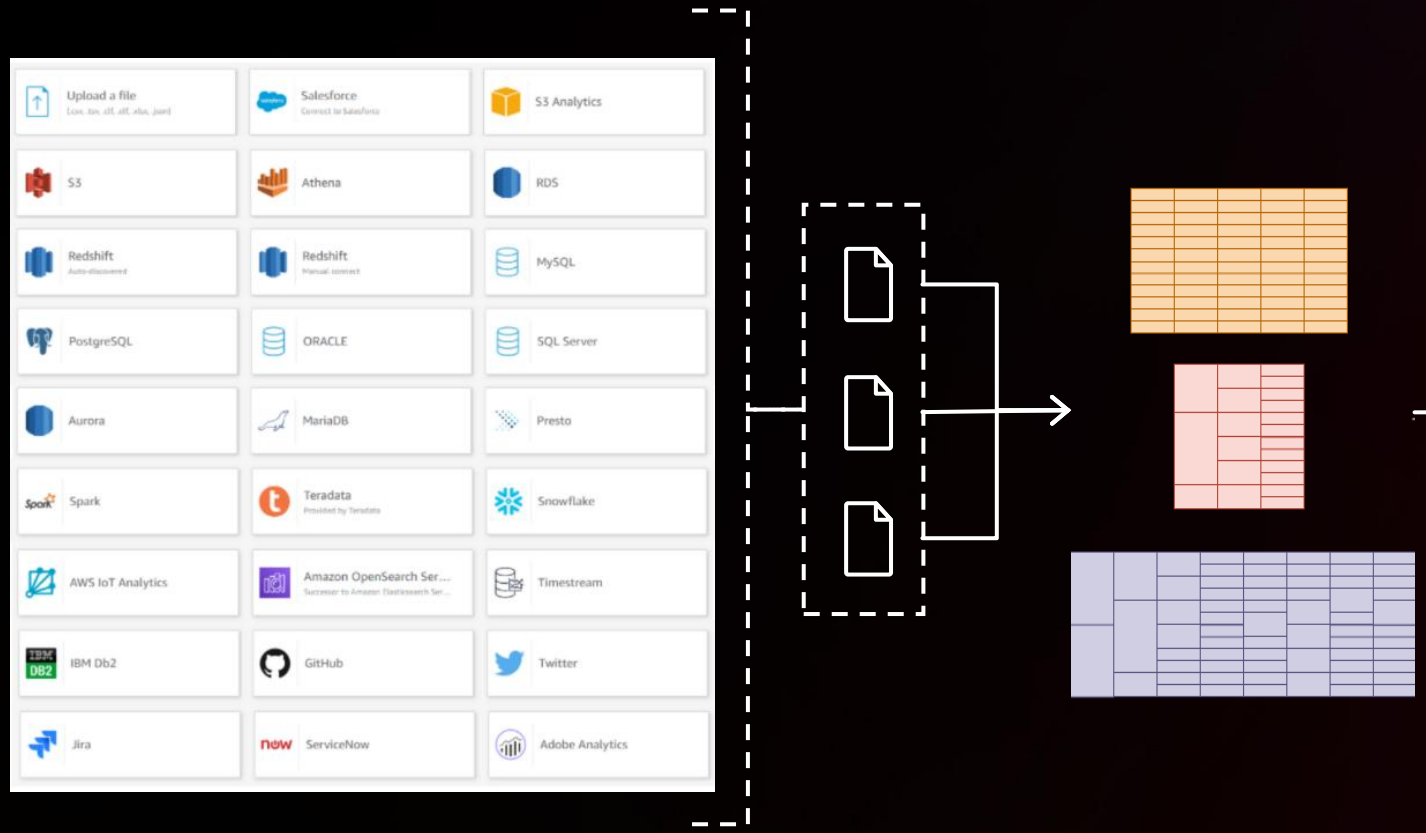
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Why calculations matter?



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BI journey and calculation needs



Data could be across different categories and hierarchies

- **Level Aware Calculations** – allow users to specify the level of granularity they want to compute window functions or aggregate functions (static or dynamic)

Data could be across different time periods and different granularities

- **Period Functions** – Out-of-box datetime-aware calculations. Allow users to build advanced trend analysis and time series analysis.

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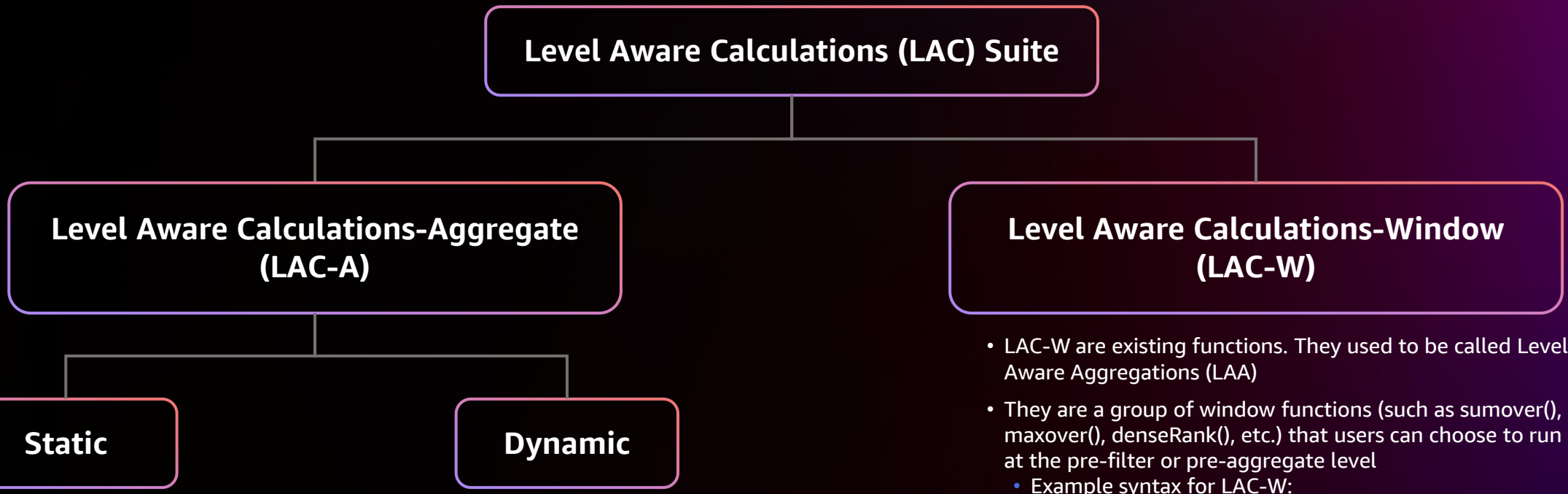
What are the new functions we launched this year?

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Level Aware Calculations (LAC) suite

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Level Aware Calculations (LAC)



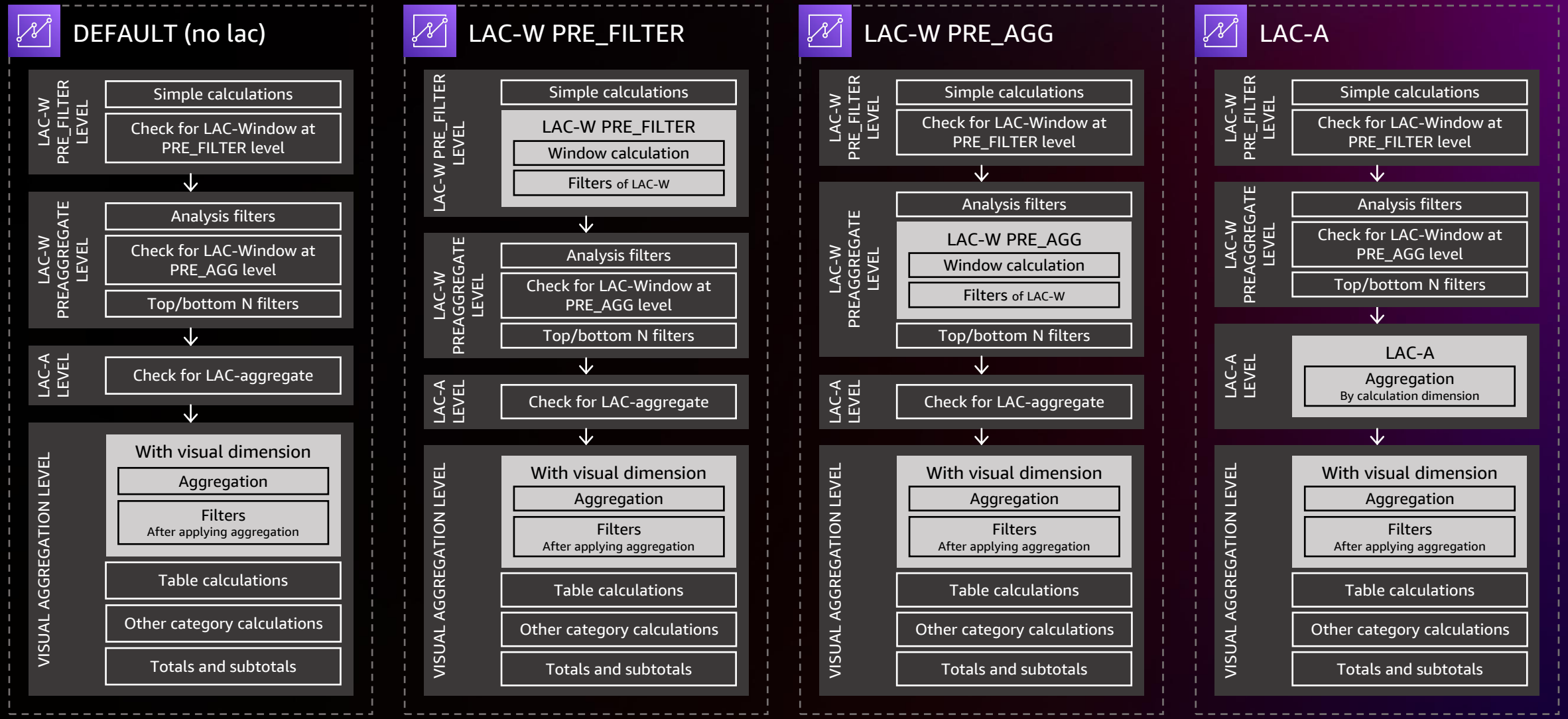
- Define any group-by levels desired for aggregation (e.g., sum(), max(), and count(), etc.)
- The level added can be any dimensions independent of the dimensions added to the visual
- A typical syntax for LAC-A is:
  sum(Sales,[LevelA, LevelB])

- Add Dimension to Visual Level Aggregation
  - Example syntax to add LevelA and LevelB:
    sum(cost, [$VisualDimensions, LevelA, LevelB])
- Remove Dimension from Visual Level Aggregation
  - Example syntax to remove LevelC:
    sum(cost, [$VisualDimensions, !LevelC])

- LAC-W are existing functions. They used to be called Level Aware Aggregations (LAA)
- They are a group of window functions (such as sumover(), maxover(), denseRank(), etc.) that users can choose to run at the pre-filter or pre-aggregate level
  - Example syntax for LAC-W:
    sumOver(Sales, [LevelD,LevelE], PRE_FILTER)
    countOver(customer, [LevelF], PRE_AGG)

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Order of evaluation: where to calculate?



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What can Level Aware Calculations do?

Define any calculation level for aggregation functions and window functions

- Static level, independent of visual
- Dynamic level, add/remove dimensions from visual

Benefits

- Easily deal with duplicated records and M:M relationships
- Nested aggregation unlock flexibility and creativity
- Customizing Order of Evaluation based on business questions

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Let’s look at some use cases:

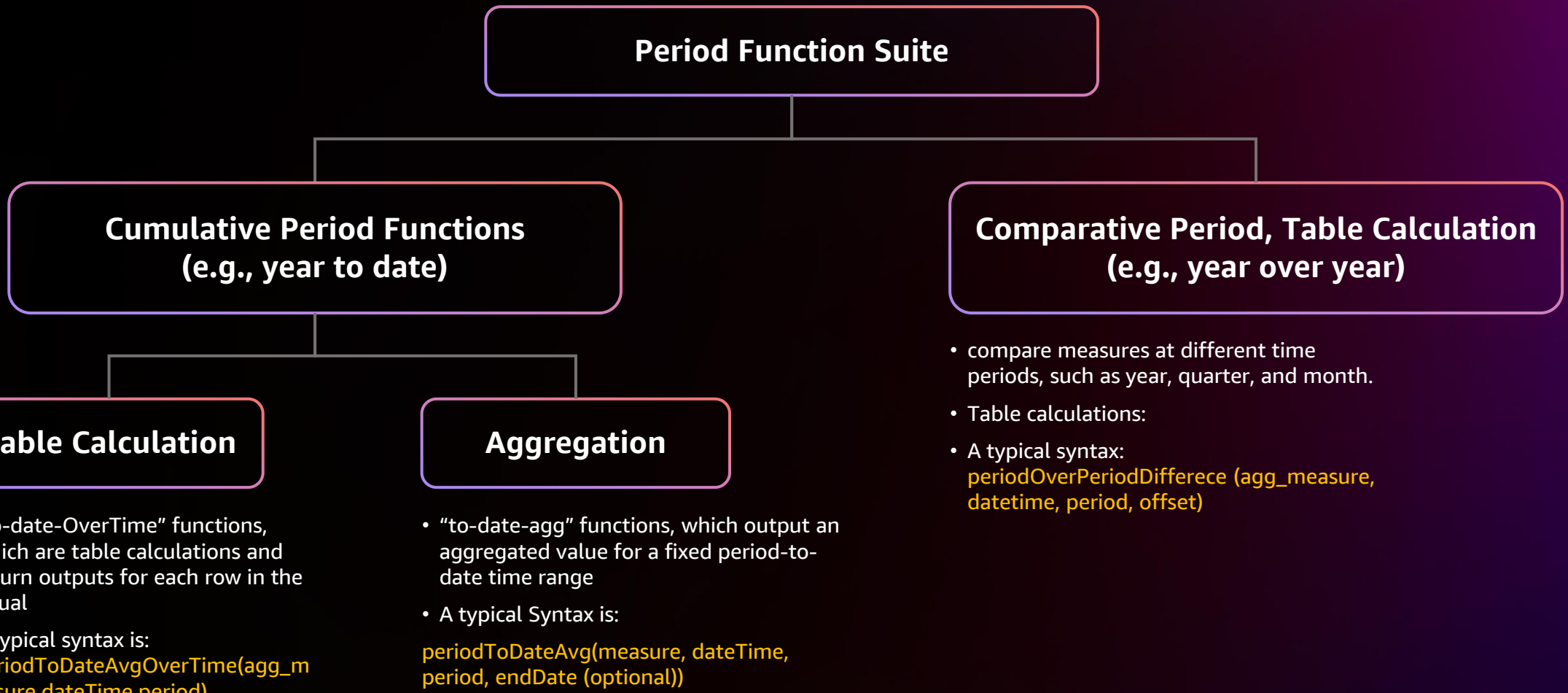
1. What are the total sales for each country?
2. Compare product average sales for some countries with the average of all countries’ sales
3. What is the max number of purchases per customer for each product?
4. How many customers have purchased the Product ”XYZ” once, twice, and so forth?
5. How can I re-use the calculation for product/industry/segment metrics?

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Period functions suite

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Period functions



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What can Period Functions do?

- Out-of-box functions dealing with datetime-aware calculation
  - Comparative: Period over Period
  - Cumulative: Period to Date
- Benefit:
  - Automatic datetime aware – no need to use complicated offsets
  - Ensures correctness when dataset is sparse

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Let’s look at some use cases:

1. What are the QoQ sales differences for each region and segment?
2. What are the QoQ sales differences at the yearly level?
3. Show the YTD count of transactions on a monthly level
4. What are the monthly YoY growths based on the monthly YTD number of transactions
5. For each year, what are the top 10 weeks of the year in regards to week-over-week sales growth

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Other functions

WORKDAY suite functions

- isworkday()
- addworkdays()
- networkdays()

CONTAINS suite functions

- contains()
- startswith()
- endswith()

SWITCH function

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Amazon QuickSight @ re:Invent

Monday, 11/28

Workshop
10:45AM | @WYN
Build stunning customized dashboards with Amazon QuickSight

Chalk Talk
12:15PM | @MGM
Insightful dashboards through advanced calculations with QuickSight

Tuesday, 11/29

Chalk Talk
11:45AM | @WYN
Deploy your BI assets at scale to thousands with Amazon QuickSight

Leadership Breakout
2:00PM | @MND
Reinvent how you derive value from your data with Amazon QuickSight

Chalk Talk
2:45PM | @CSR
Architecting multi-tenancy for your apps with Amazon QuickSight

Wednesday, 11/30

Breakout
2:30PM | @WYN
Migrate to cloud-native business analytics with Amazon QuickSight

Breakout
4:45PM | @MGM
Get clarity on your data in seconds with Amazon QuickSight Q

Workshop
5:30PM | @WYN
Seamlessly embed analytics into your apps with Amazon QuickSight

Chalk Talk (repeat)
7:45PM | @WYN
Architecting multi-tenancy for your apps with Amazon QuickSight

Thursday, 12/1

Workshop (repeat)
11:45PM | @CSR
Build stunning customized dashboards with Amazon QuickSight

Breakout
12:30PM | @CSR
Differentiate your apps with Amazon QuickSight embedded analytics

Breakout
3:30PM | @Encore
Optimize your AWS cost and usage with Cloud Intelligence Dashboards

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Thank you!

Emily Zhu

Senior Product Manager

Amazon QuickSight

emilyzhu@amazon.com



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