

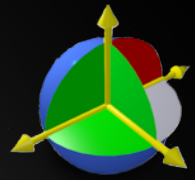
What are Financial CAT scans?

Financial CAT scans are MEE methods for data reductions

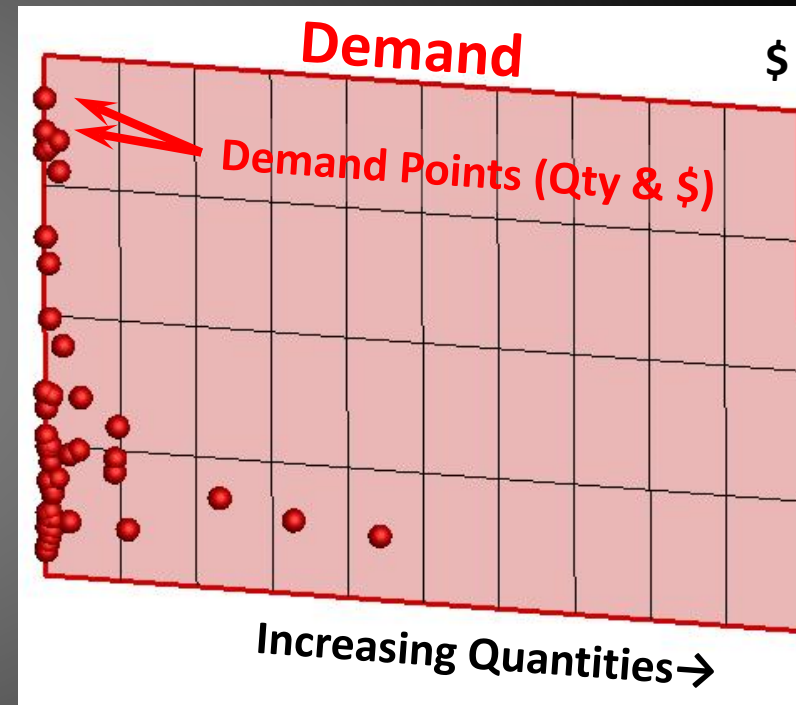
- Data reduction starts with MEE 4D™ constructs
 - 3 Value Axes: Valued attributes 1 and 2, and \$ form Value Spaces
 - 2 Demand Axes: Quantity and \$ form Demand Planes
 - Value Spaces and Demand Planes abut along \$ axes
- After selecting price targets as limits
 - We remove Demand Planes (leaving 3D Value Spaces)
 - We take 2D section cuts in Value Spaces (as Financial CAT scans)
 - We search for the tallest Profit Lines, the vertical distance between the demand limit/value intersections and cost lines

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More dimensions. More profits.

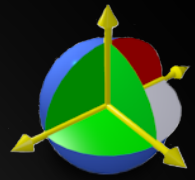


We start with demand points, ordered pairs of quantities (horizontal) and prices (vertical) for a given market (as red points for the General Aviation market, at right). This data may be in log-linear format, or, as shown here, in linear form.

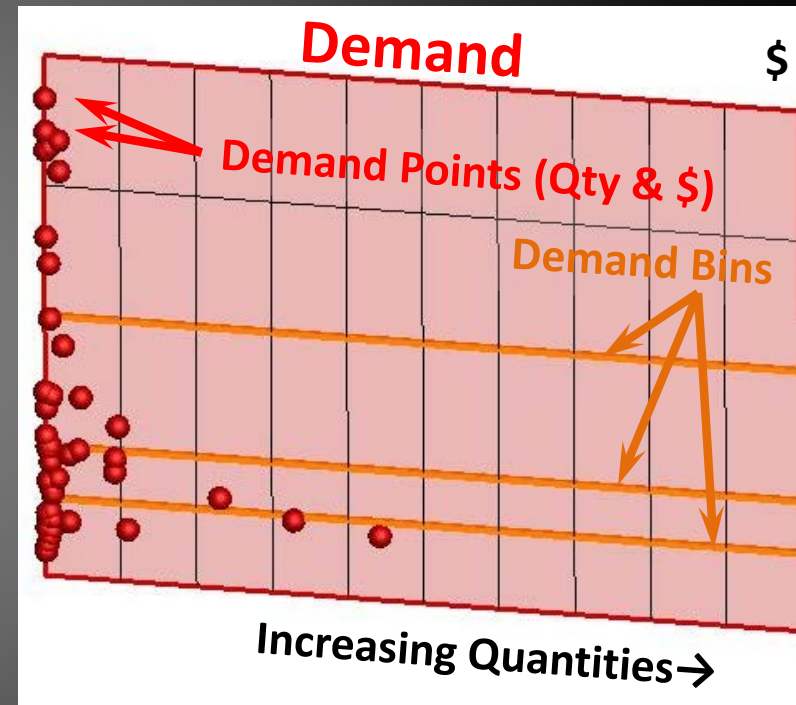


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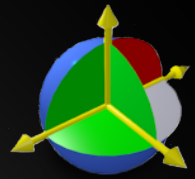


There is little correlation in the data without manipulation, so we put the data into bins.

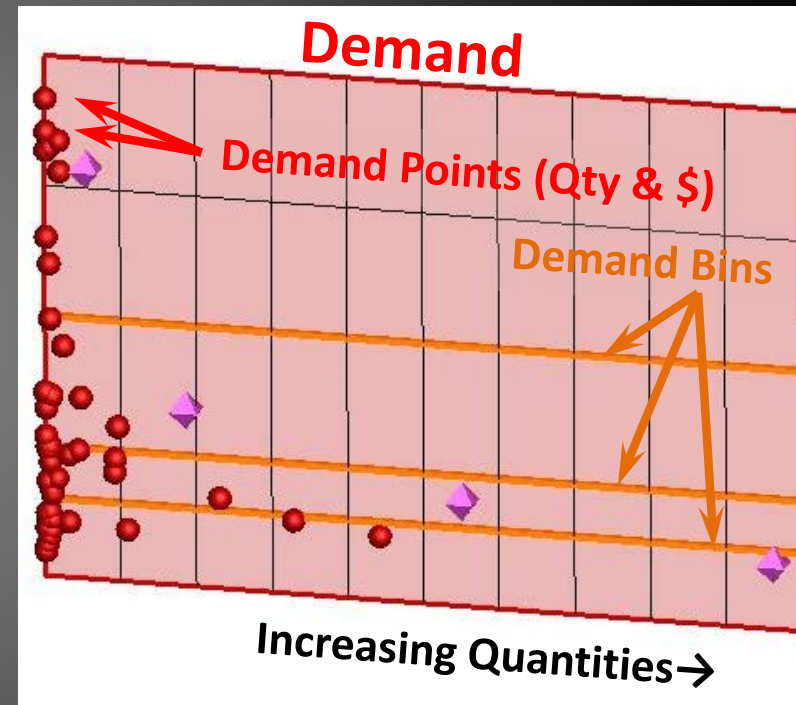


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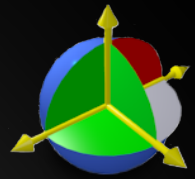


We add up the total quantities & figure out the average price in each bin (the purple octahedrons).

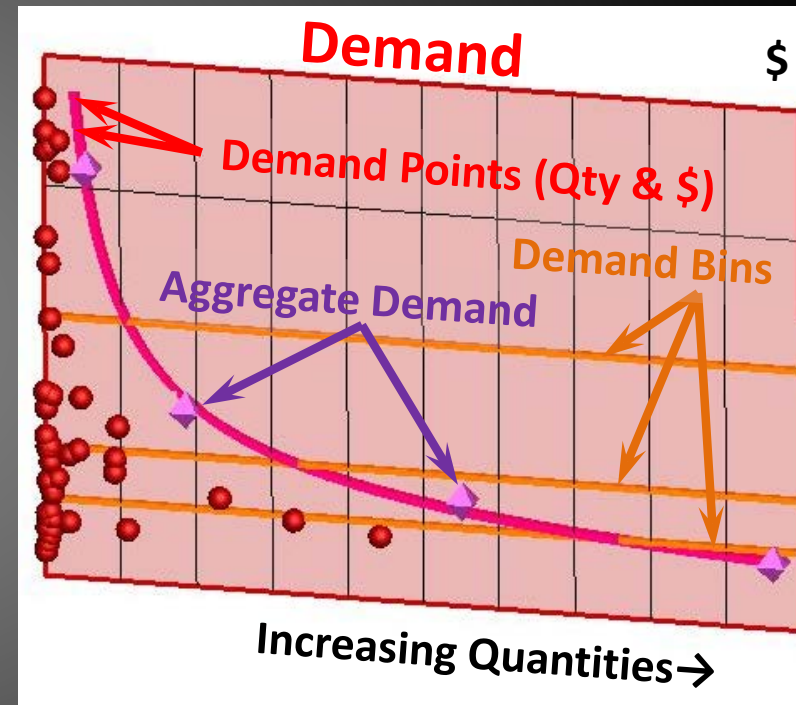


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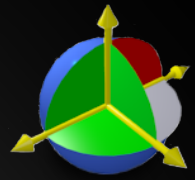


We perform regression analysis on the aggregate demand points and find a suitably correlated curve

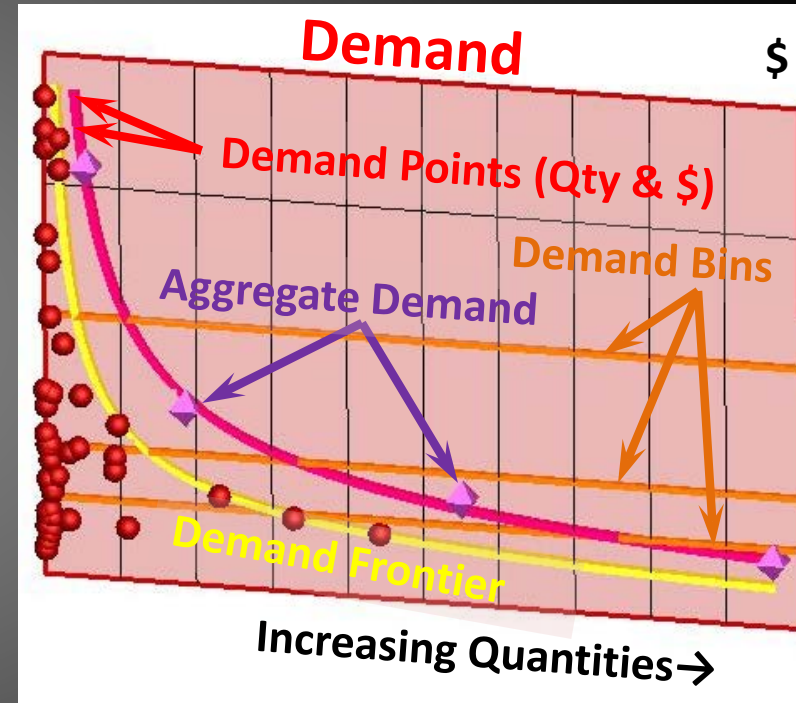


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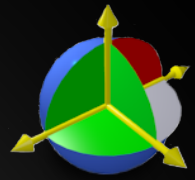


To the left of Aggregate Demand Curves we find those product demand points (in red) furthest from the \$ axis. Yellow lines called Demand Frontiers run through these points. In all markets, no products sell beyond their Demand Frontiers, by definition.

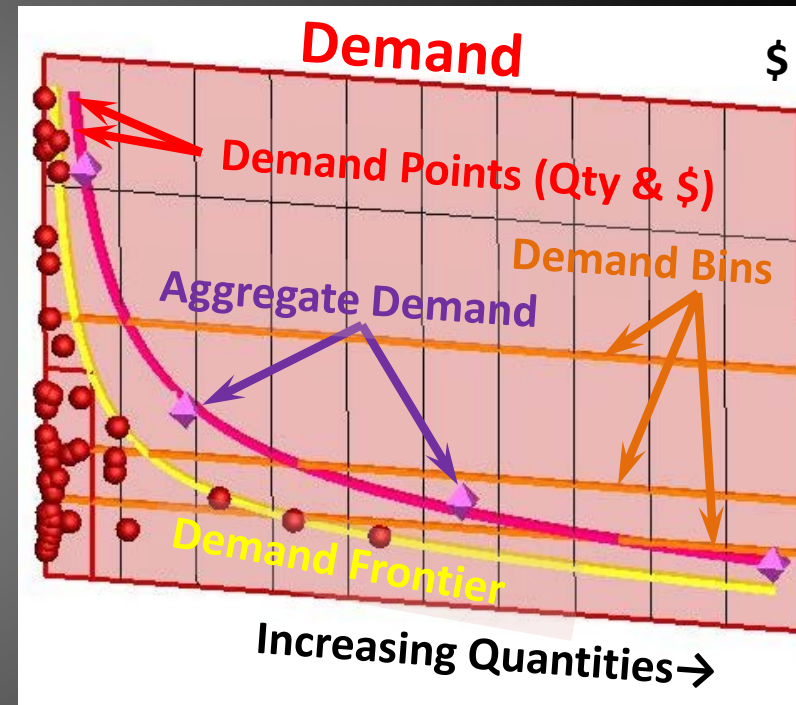


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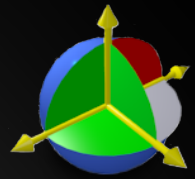


New product placements require plans. In this market we have picked a target price where no one else competes. This point has implications not only for price (the short red horizontal line), but for quantities as well (the longer red vertical line), since the Demand Frontier limits quantities sold.

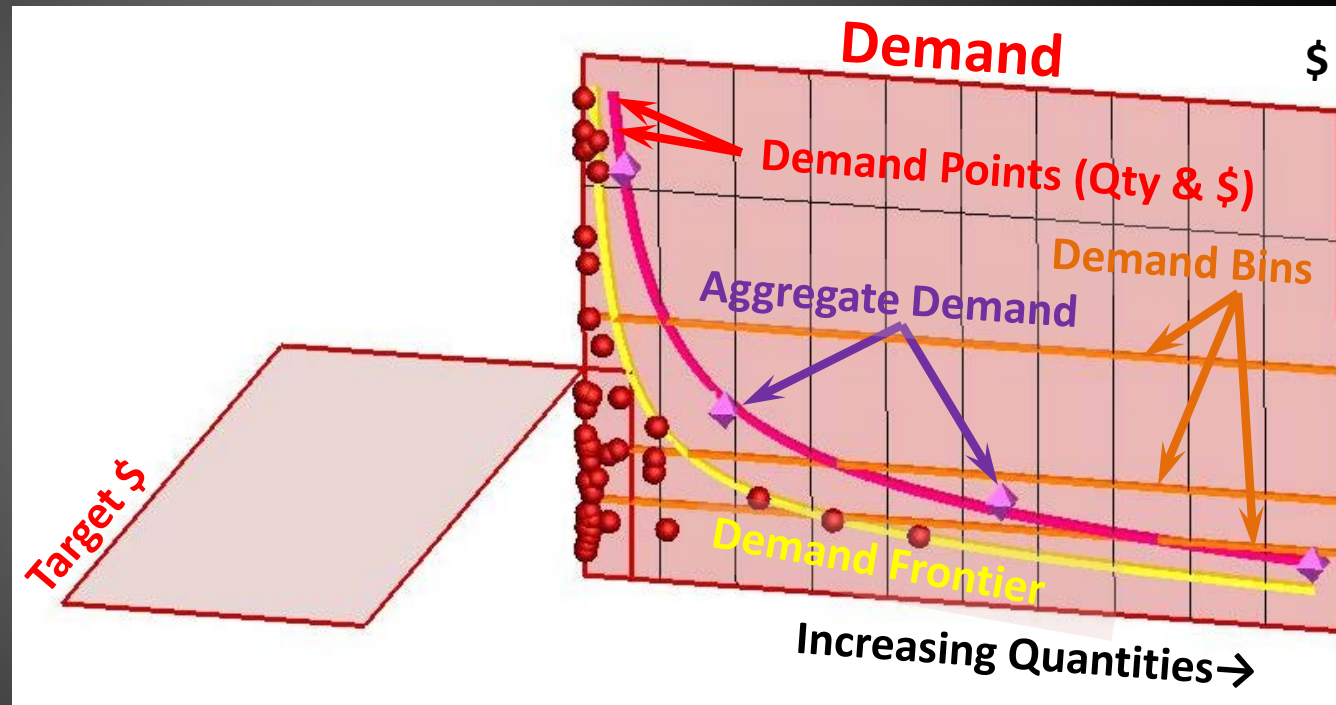


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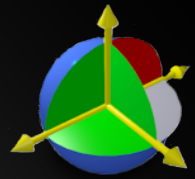


The target price forms a horizontal limit in another region, we need to specify...

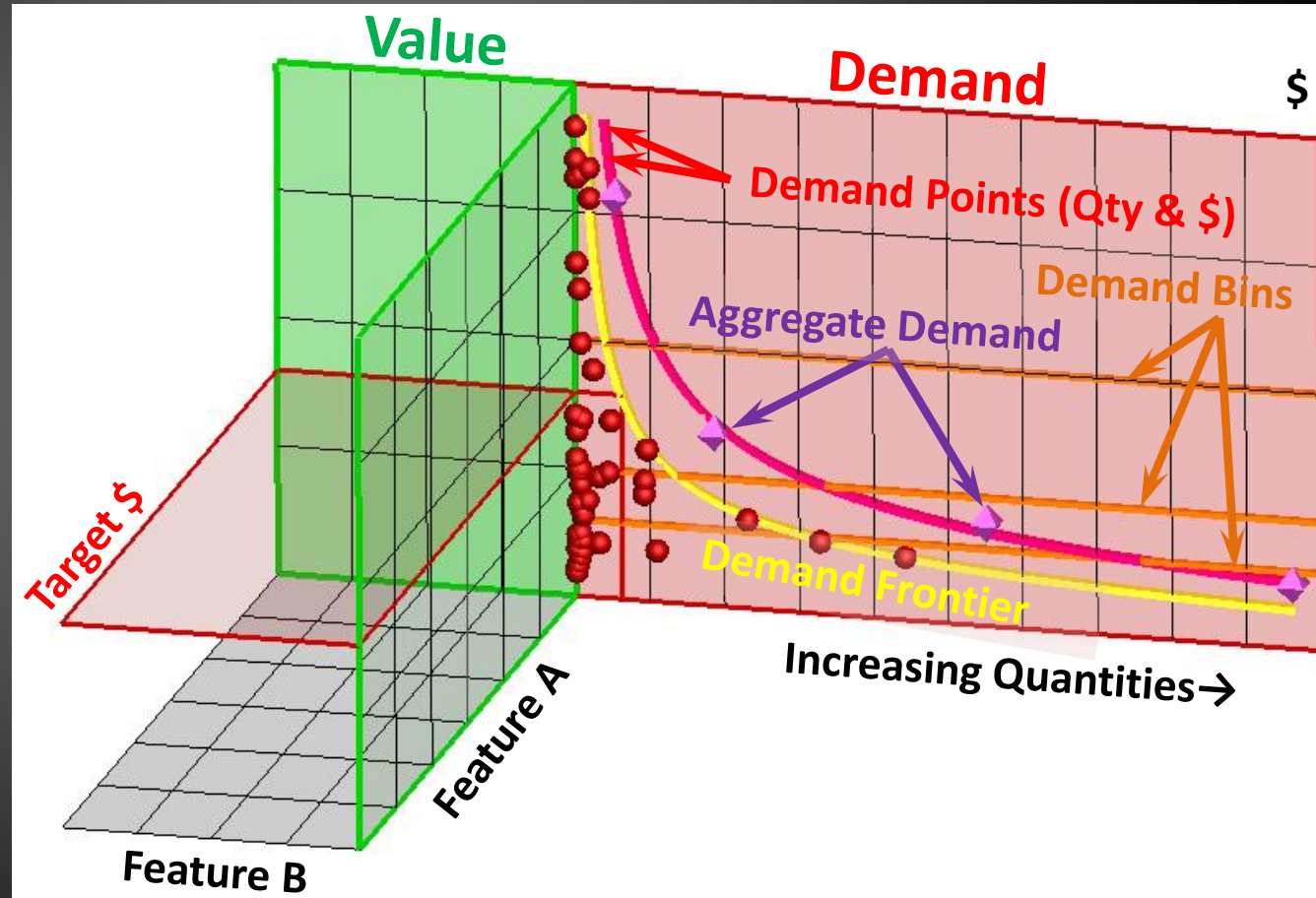


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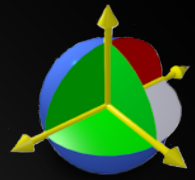


That region is Value Space. It has a pair of valued Features, A & B, as its horizontal axes. Value Space shares the vertical \$ axis with the Demand Plane, forming a non-negative system of 4 dimensions, with an origin of (0,0,0,0). This analysis format turns out to be useful.

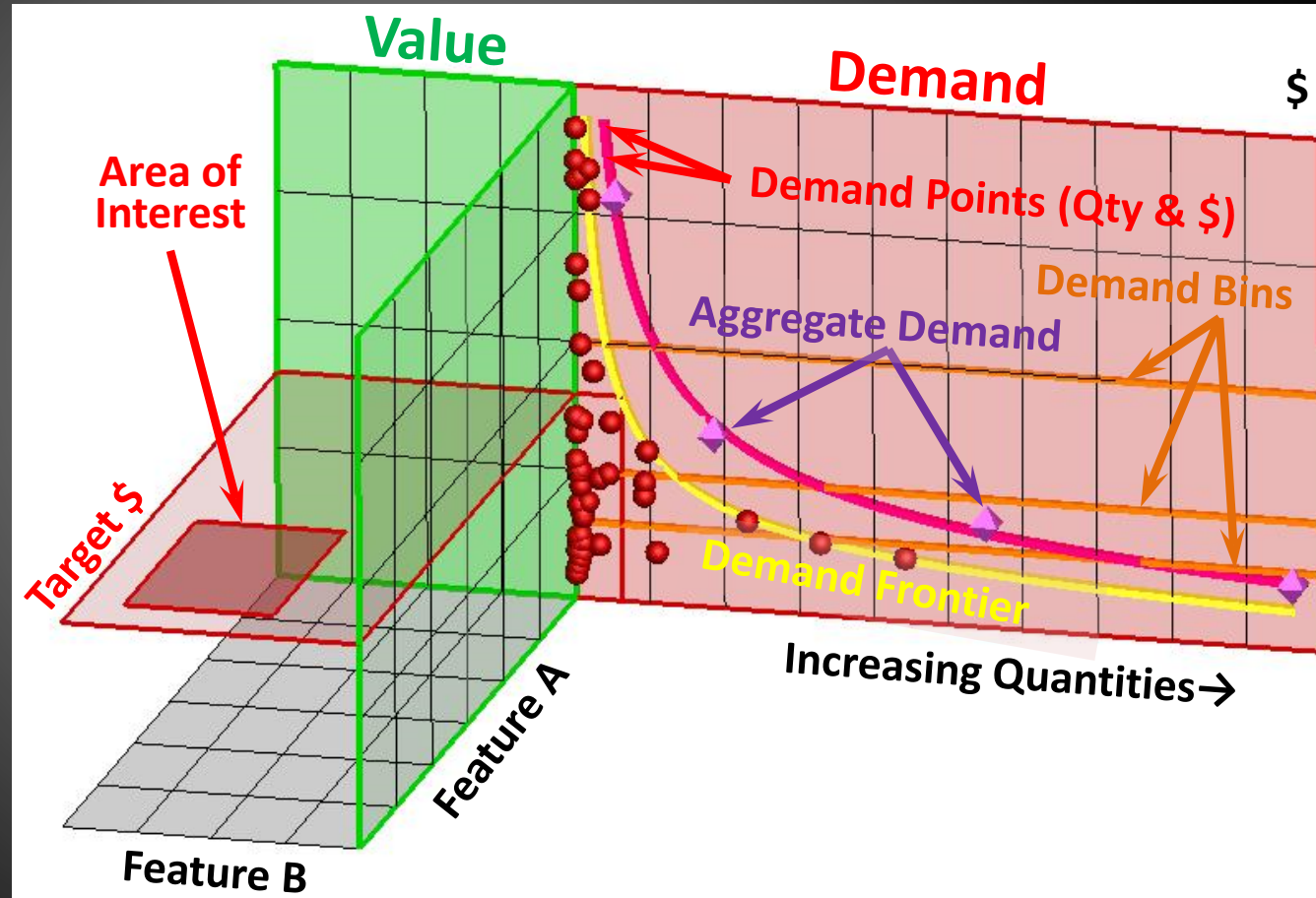


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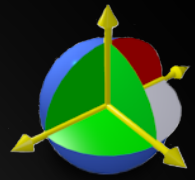


Not all regions within Value Spaces are necessarily viable. We may want to narrow our focus and define an Area of Interest.

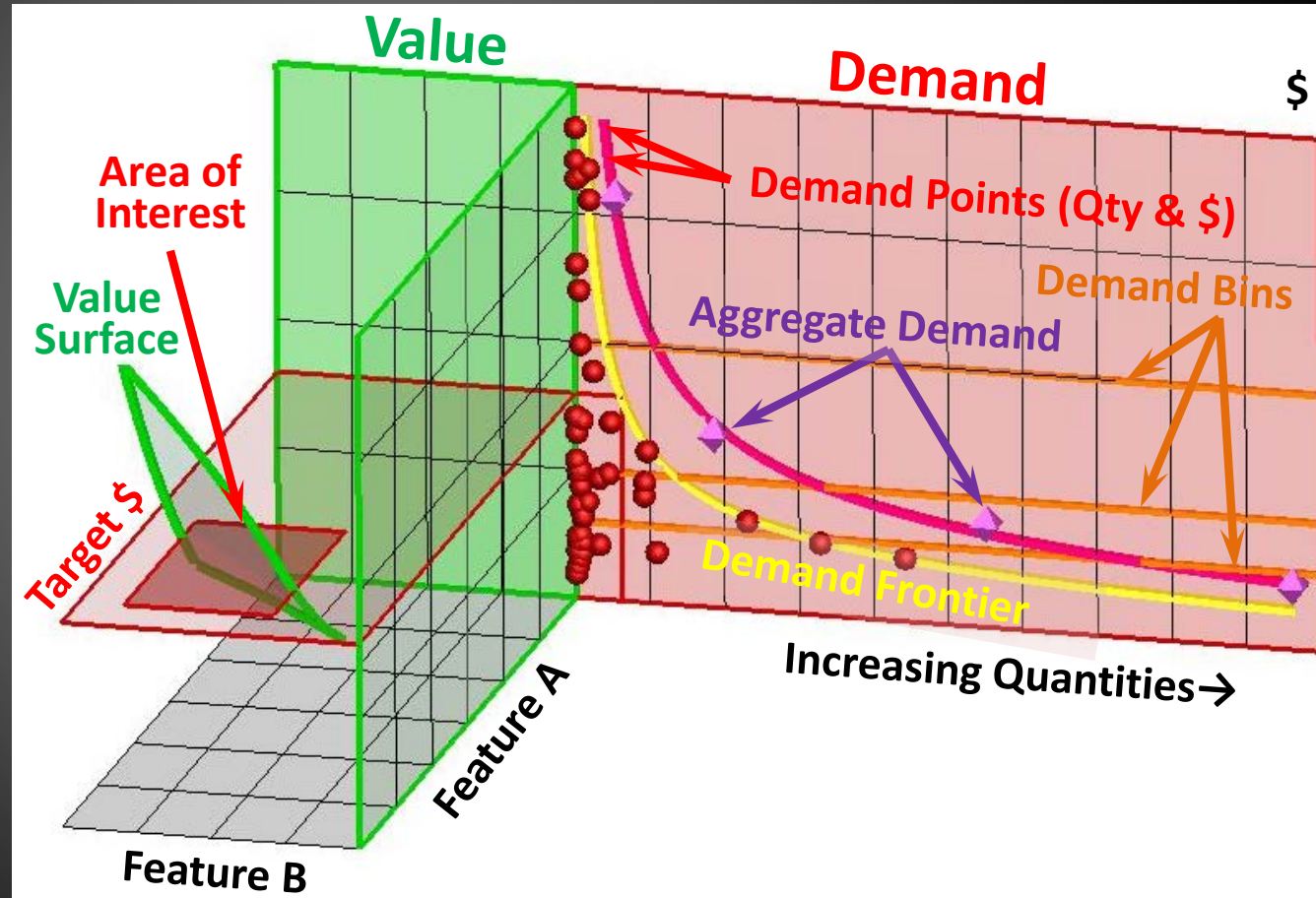


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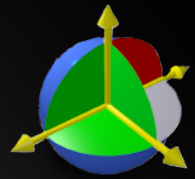


Analysts design Value Spaces such that they know that Features A and B have impact on the sustainable prices, or values, that their customers place upon products within markets. The Value [Response] Surface at right reflects how customers value Features A & B according to a Value Estimating Relationship (VER) (done separately).

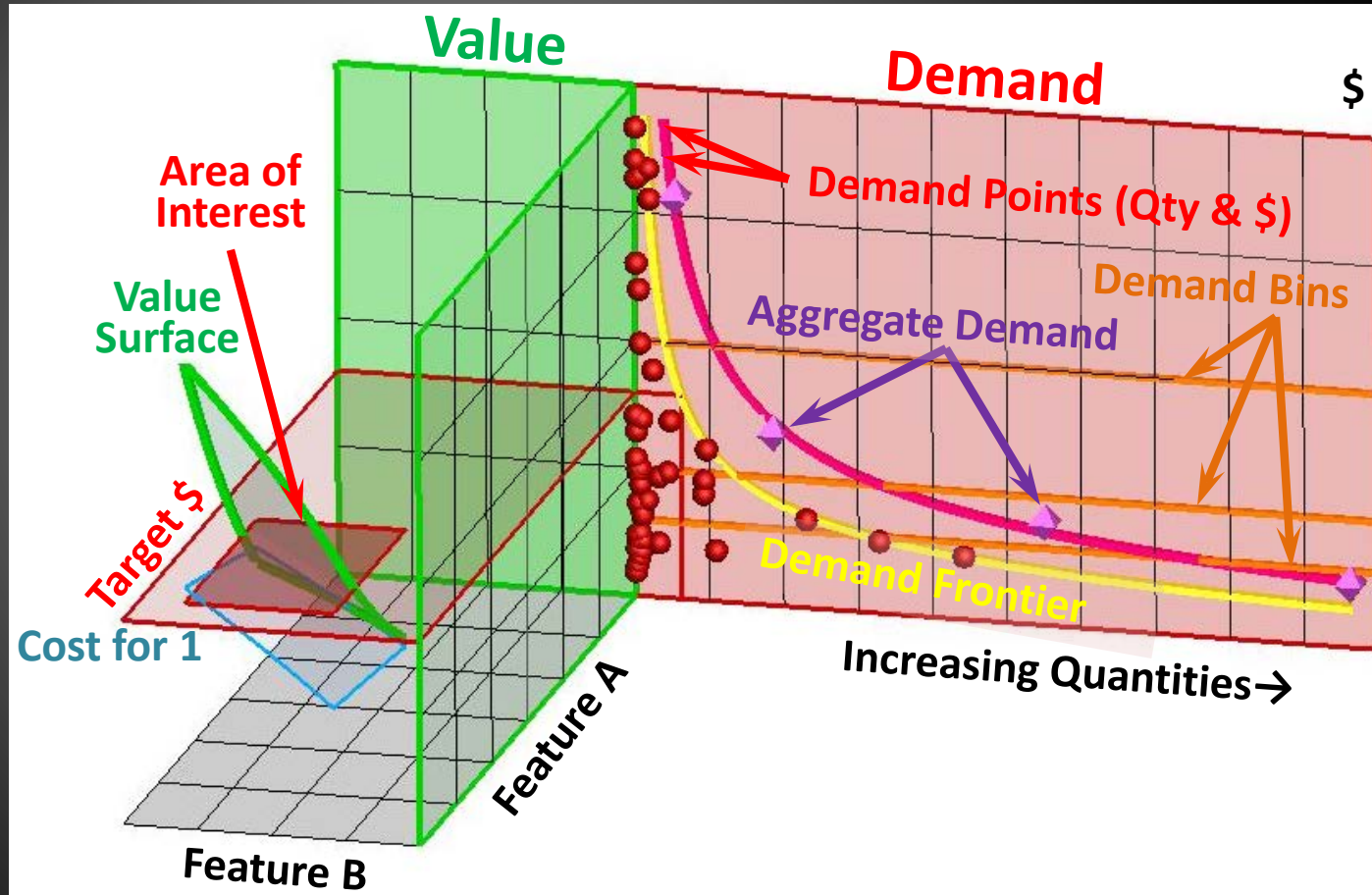


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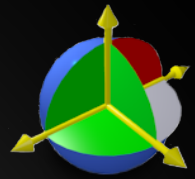


Analysts manipulate data to express cost in the same terms as value. Here, the cost for 1 unit is generally less than its value, excepting only that portion closest to the origin. Note that as Features A and B increase, cost does not rise as fast as value. Firms never want to increase costs faster than values.

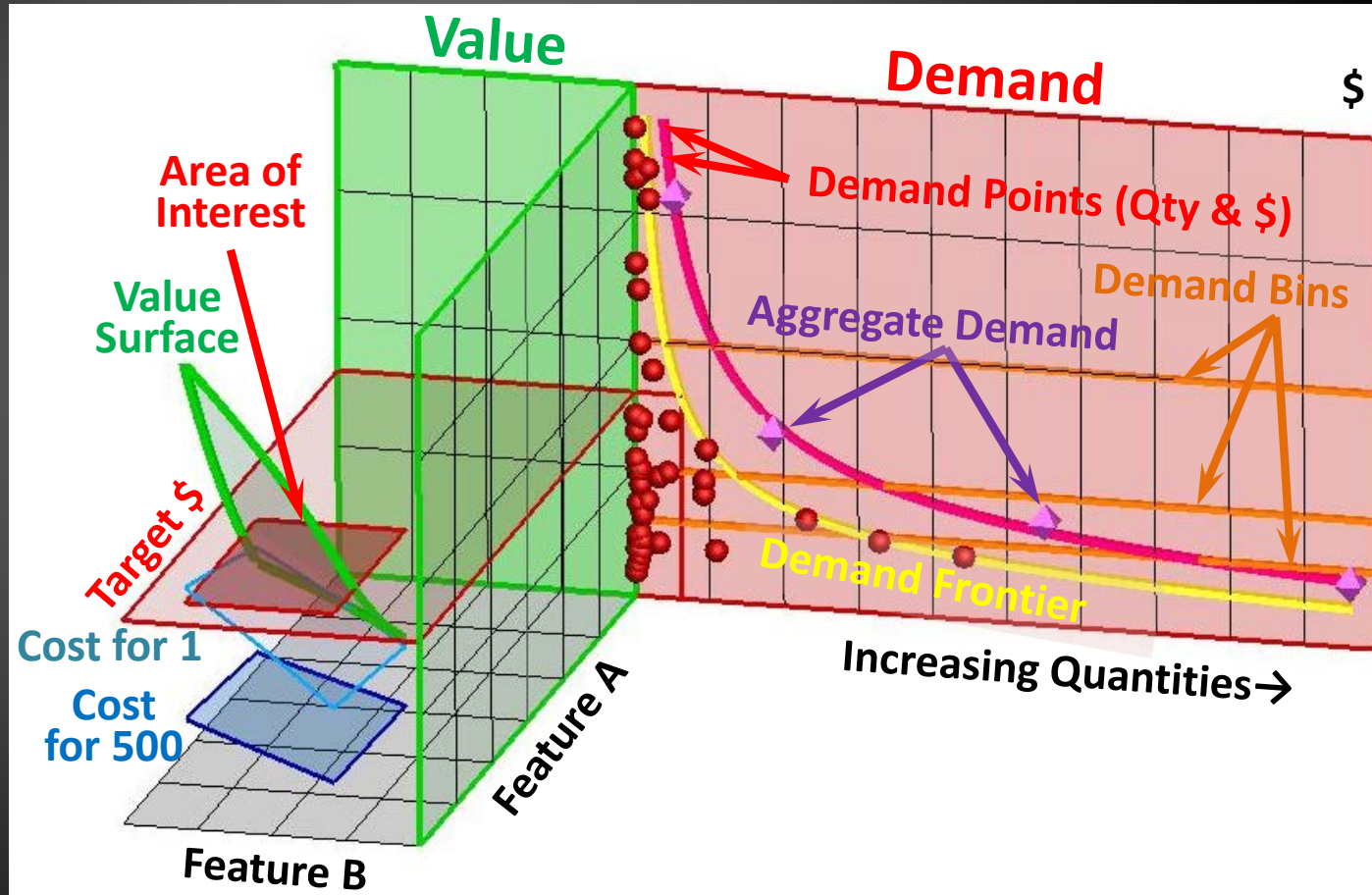


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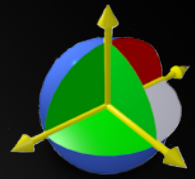


Average costs fall as firms produce more units. Here we have added the average cost to produce 500 units.

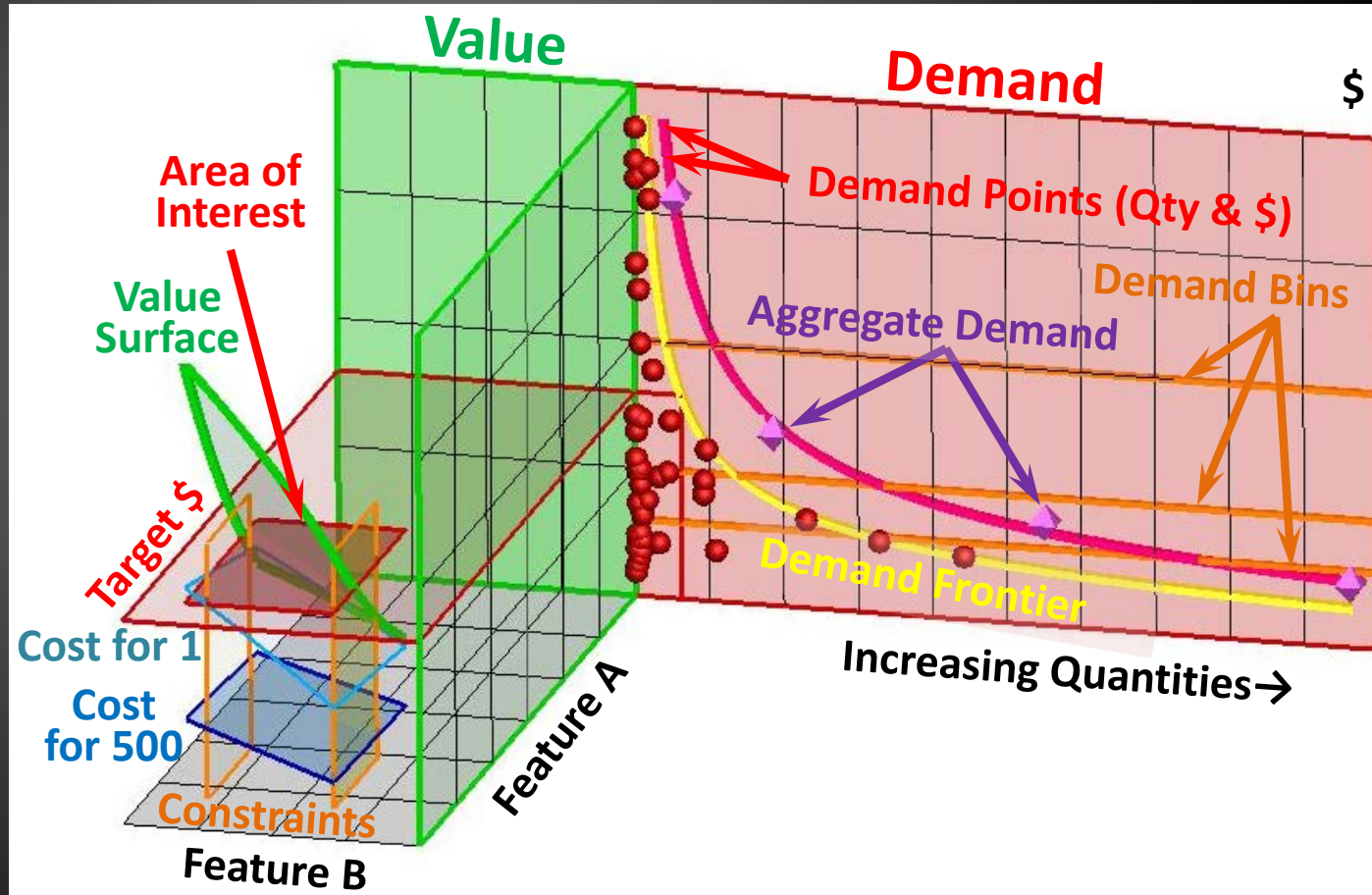


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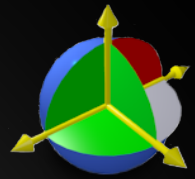


Firms often face constraints. They may be legal, technical or physical, or brought on by other forces. In the case at right, there are minimum and maximum constraints in the Feature A direction.

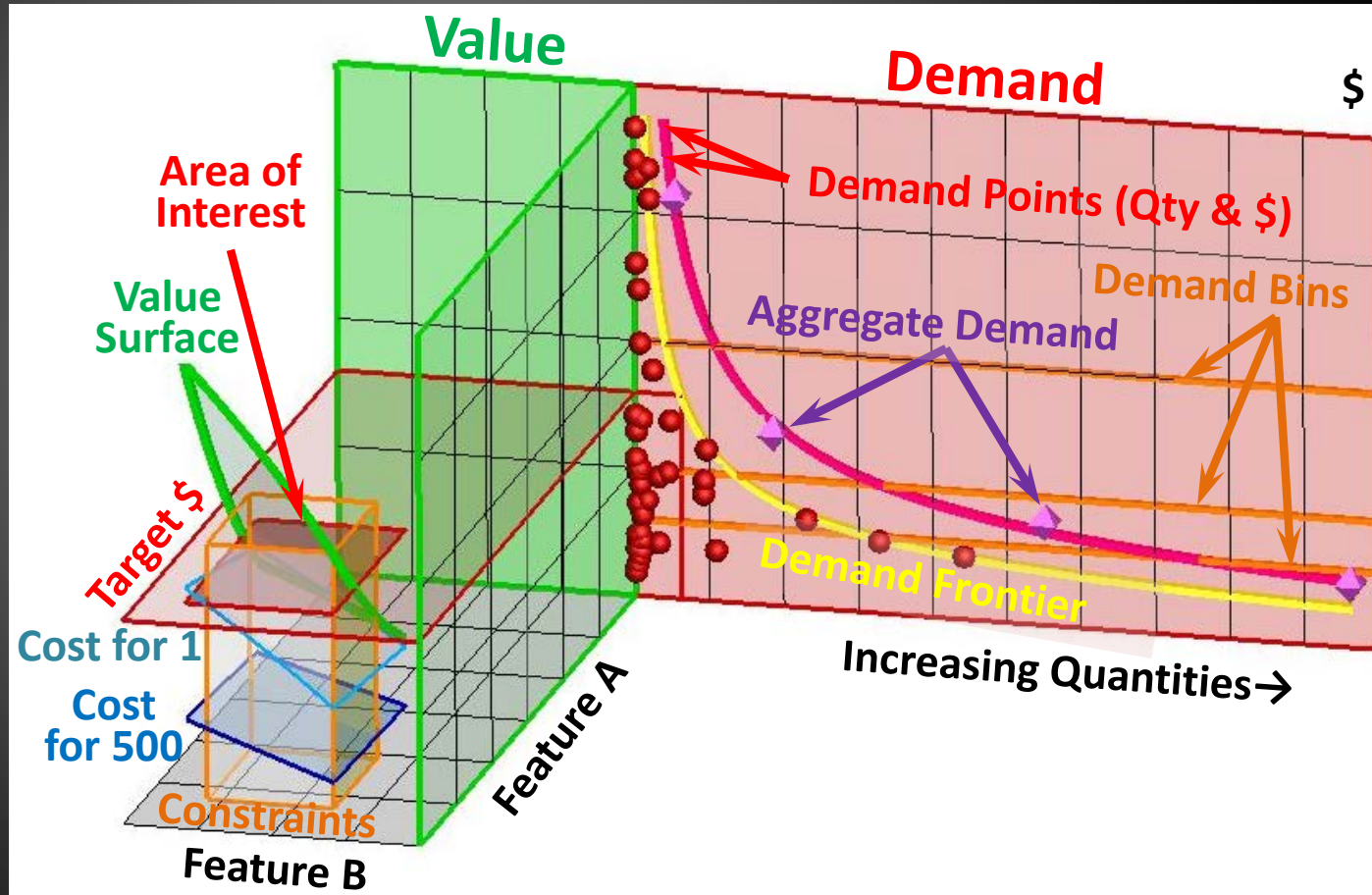


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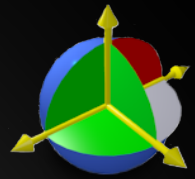


Several constraints may come into play simultaneously. In addition to those limiting Feature A, in this case there are minimum and maximum constraints in the Feature B direction.

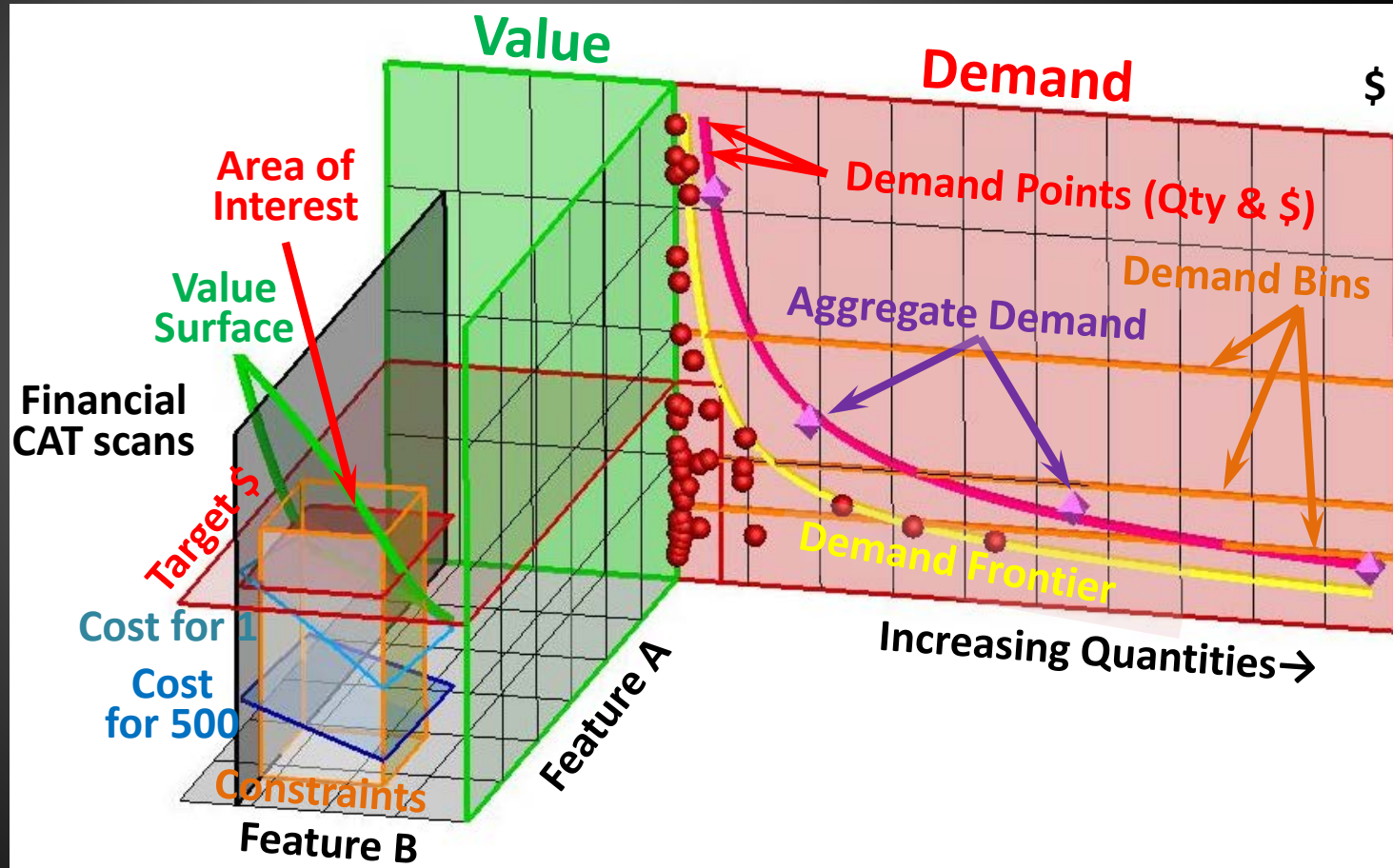


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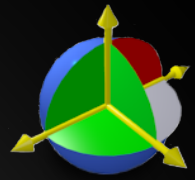


Financial CAT scans, like medical CAT scans, are 2 dimensional section cuts through a region. Here we start along the Feature B axis towards the origin...

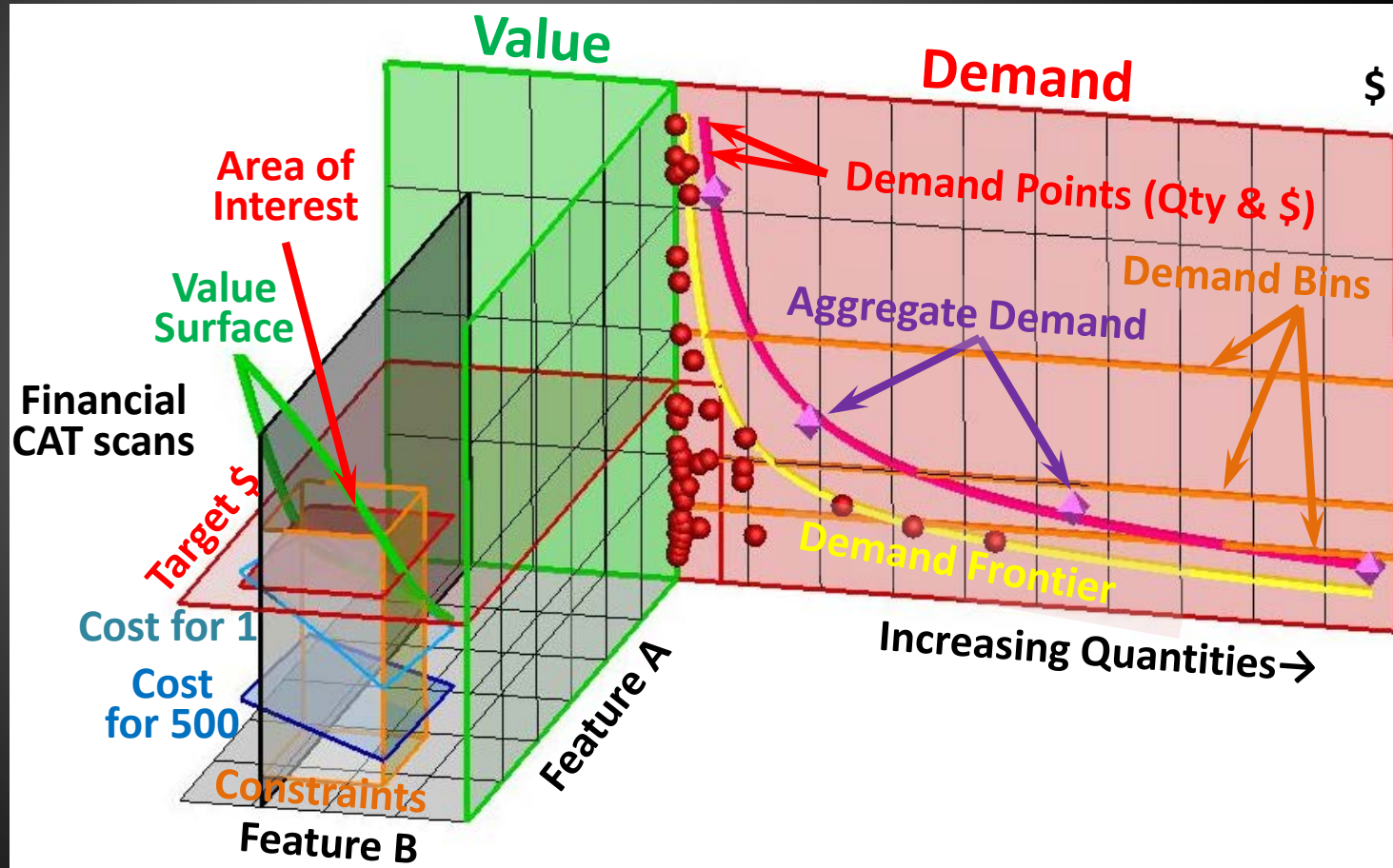


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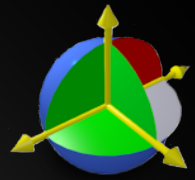


And we continue...

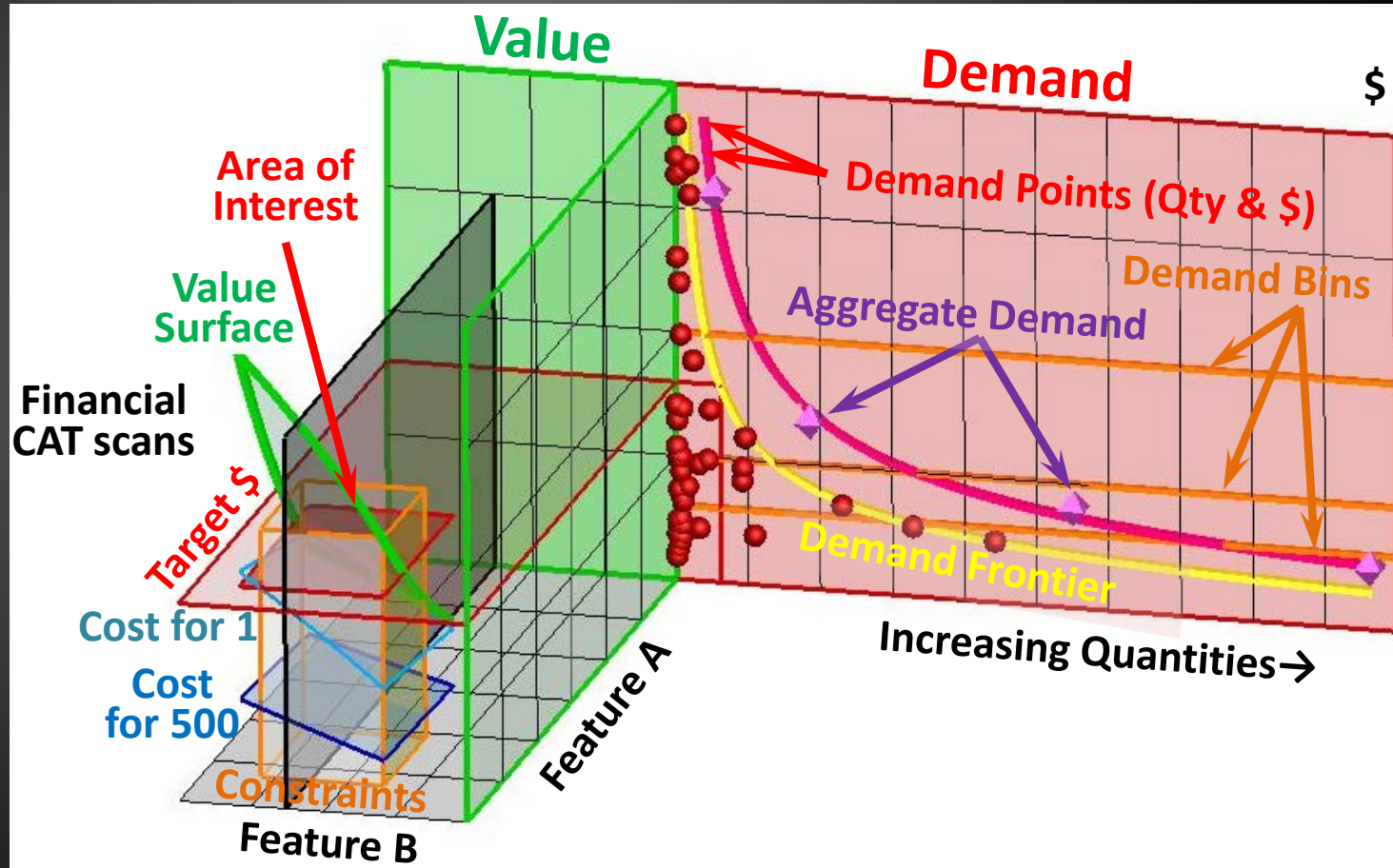


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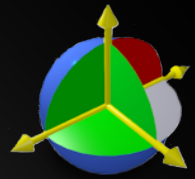


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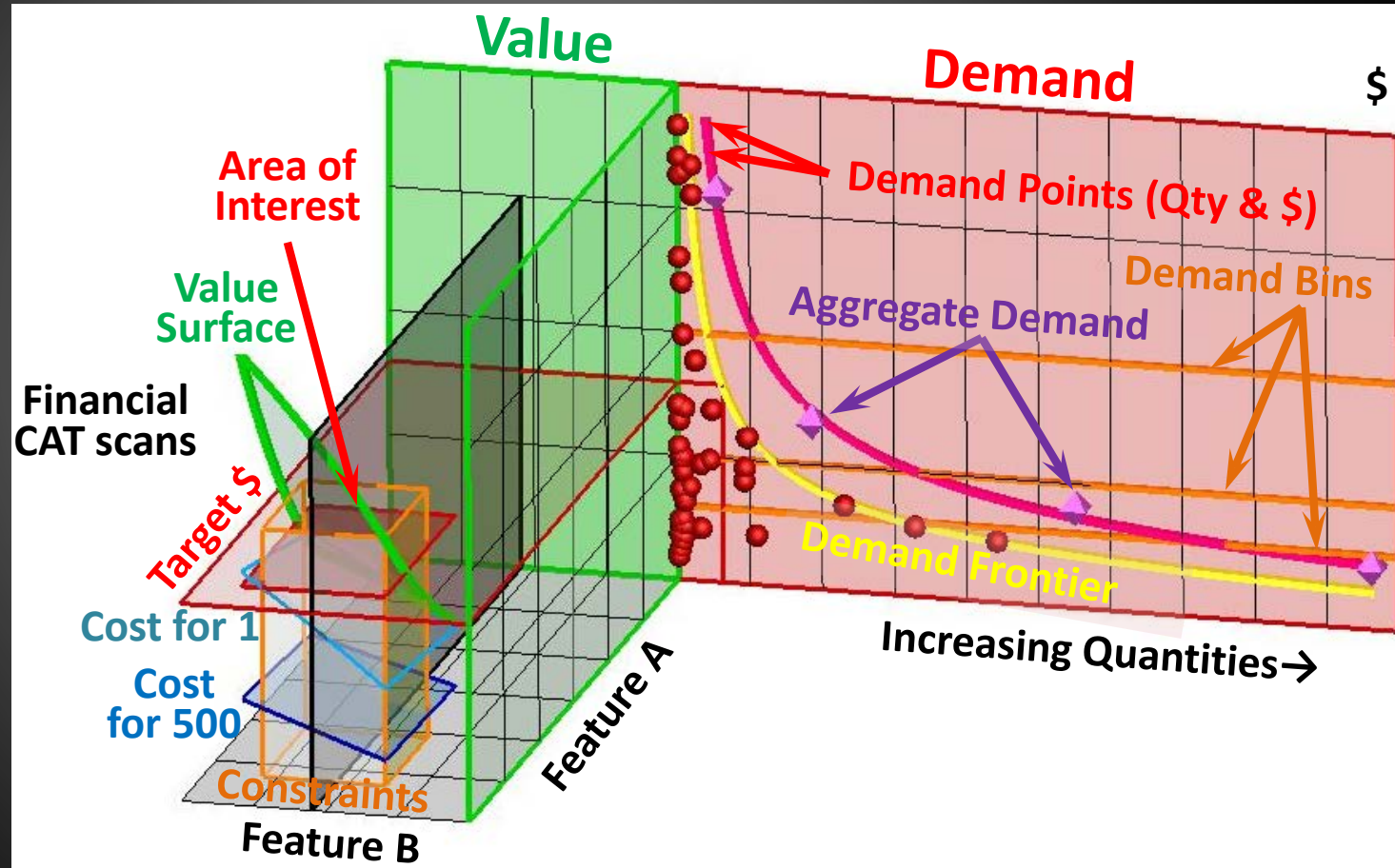


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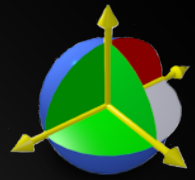


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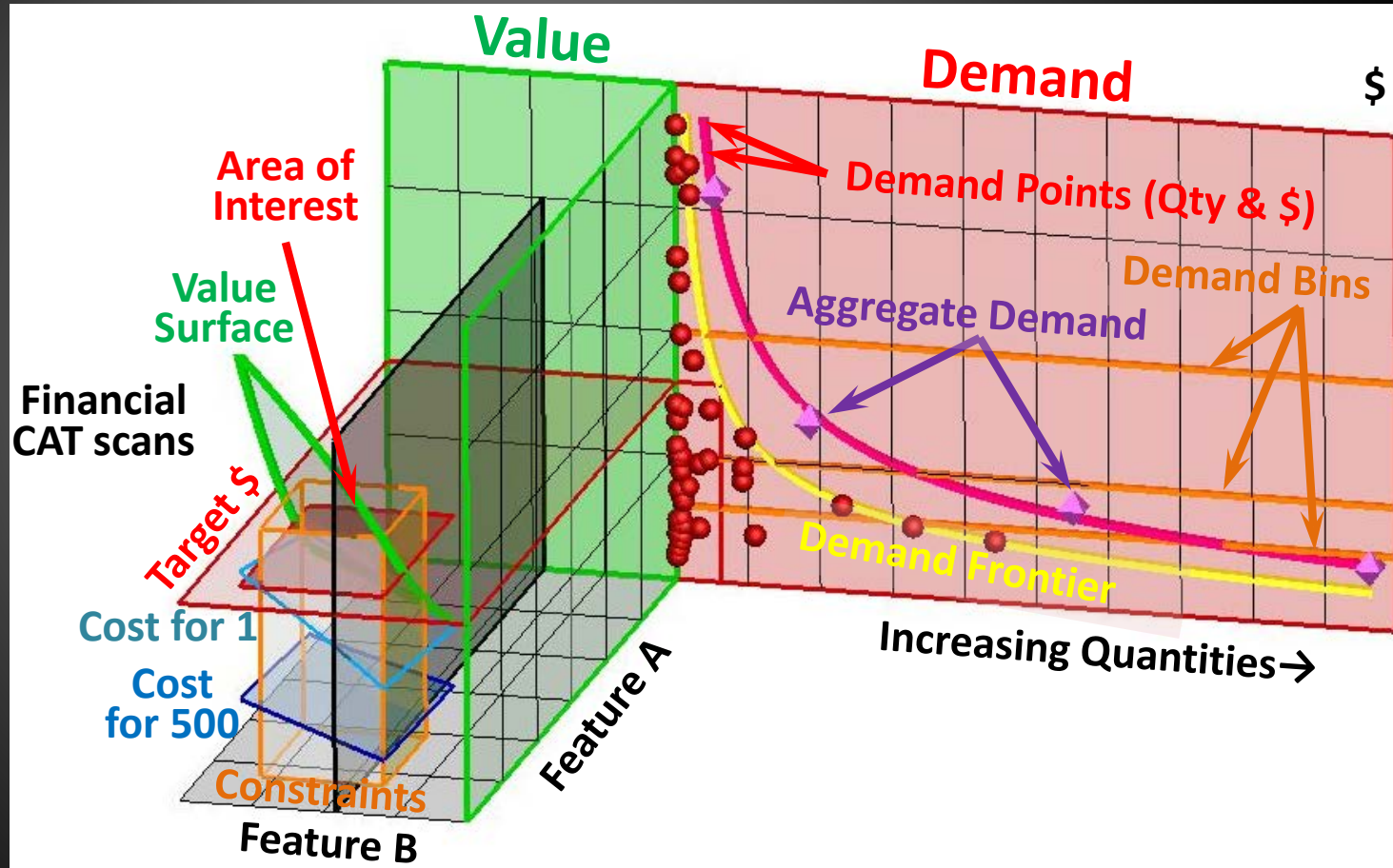


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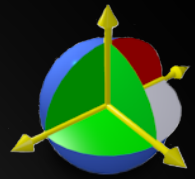


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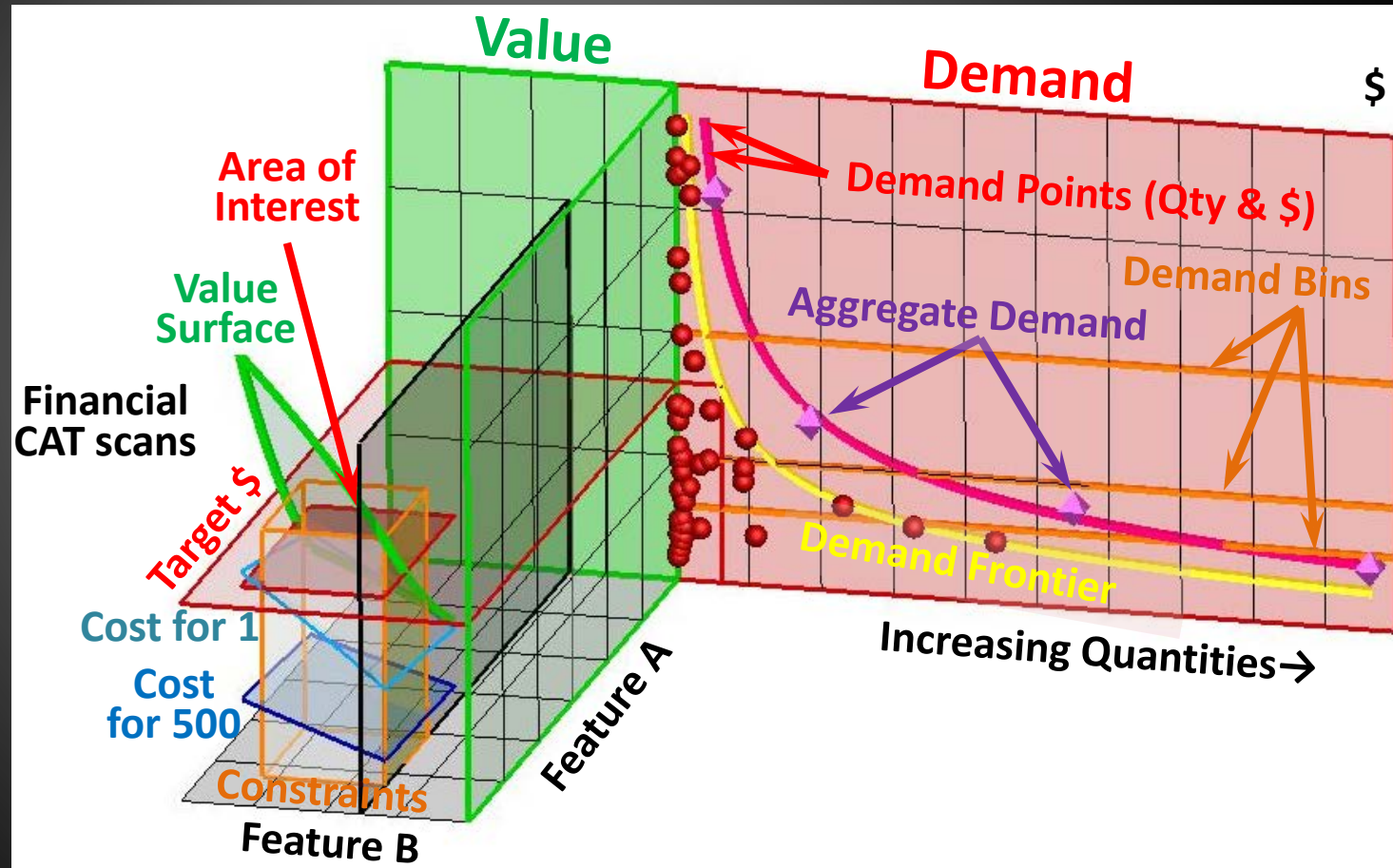


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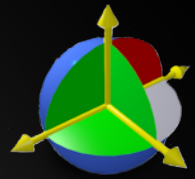


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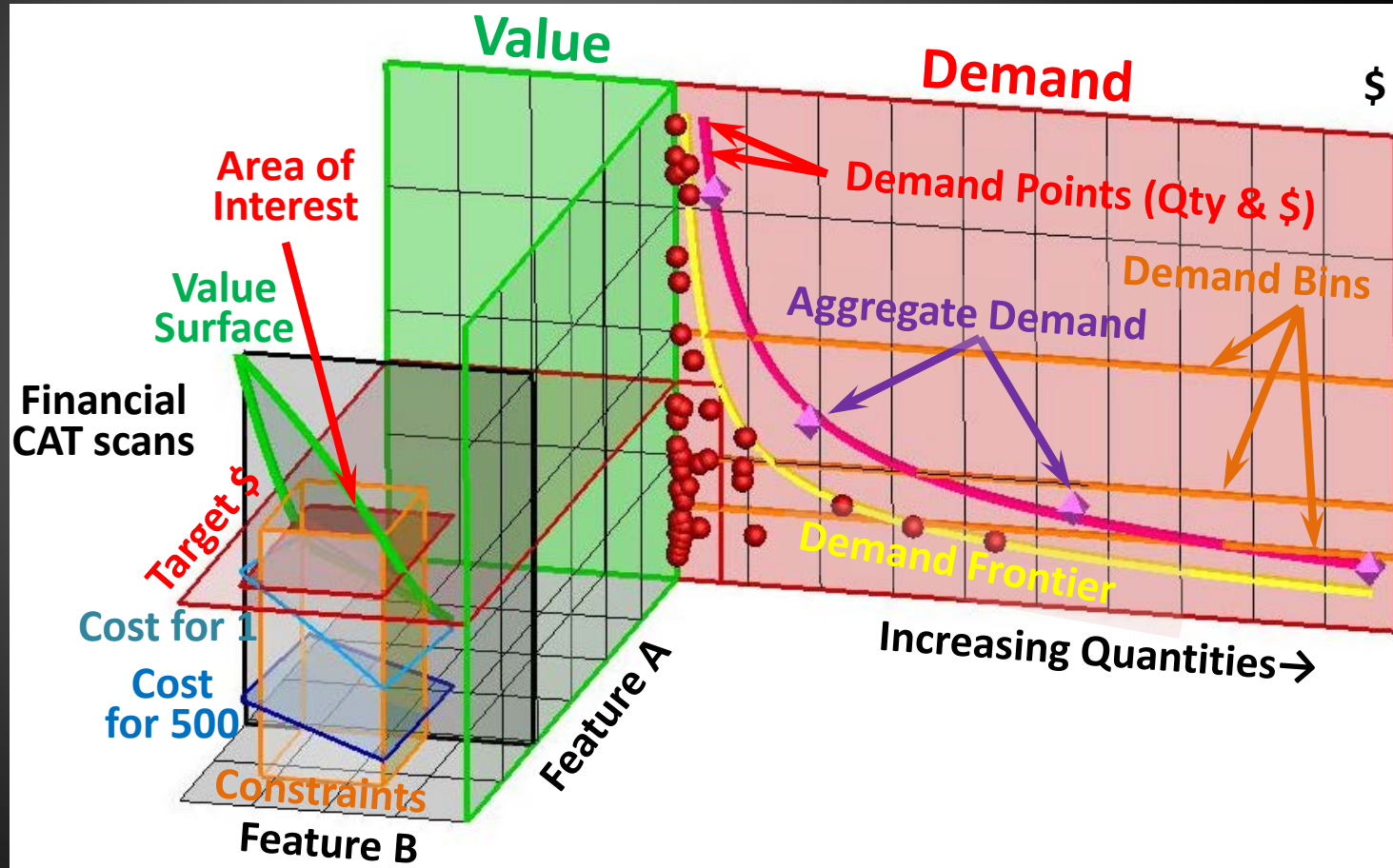


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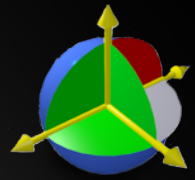


Once we get enough views in one direction, we turn and go down the Feature B axis, moving away from the origin...

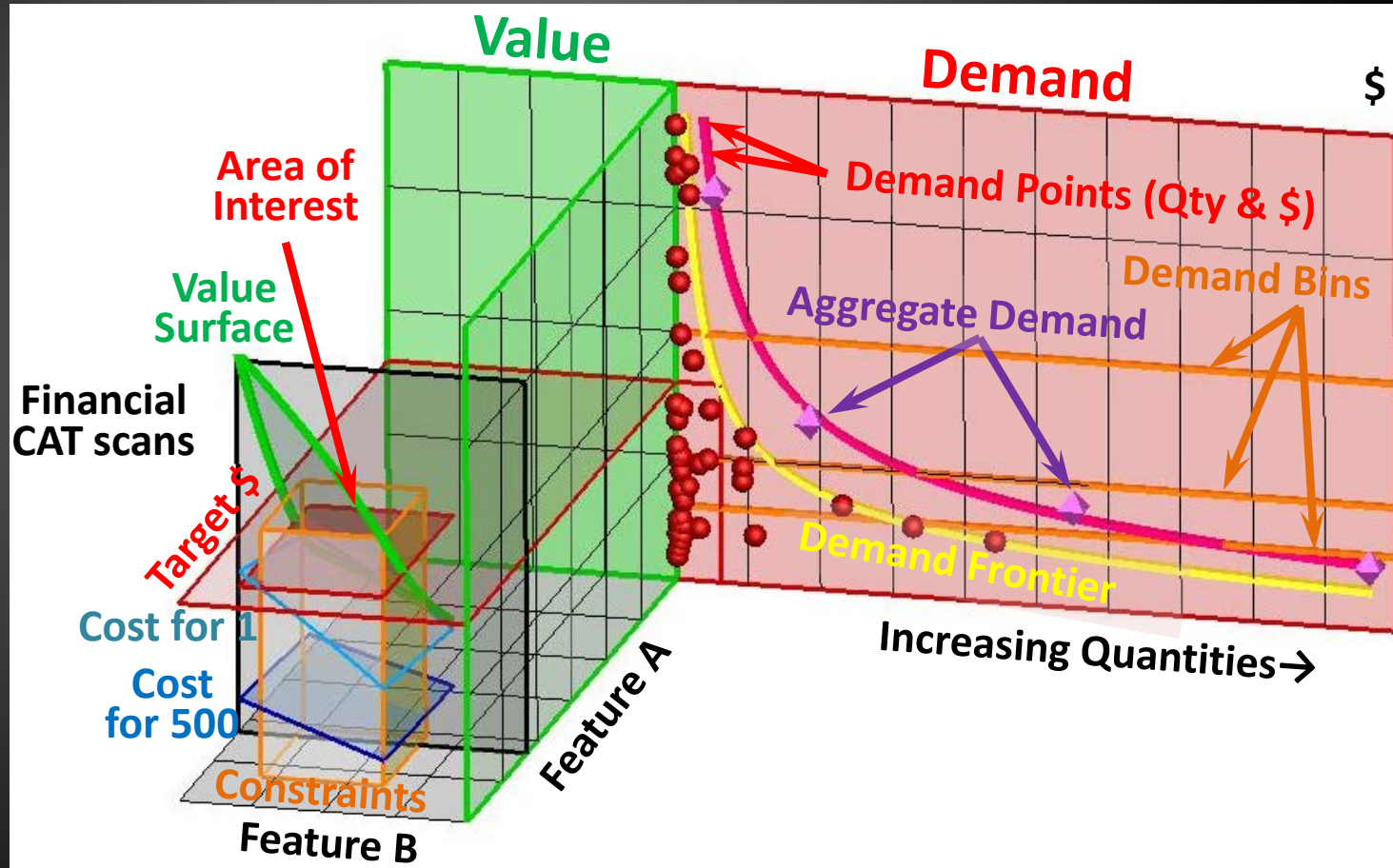


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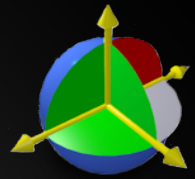


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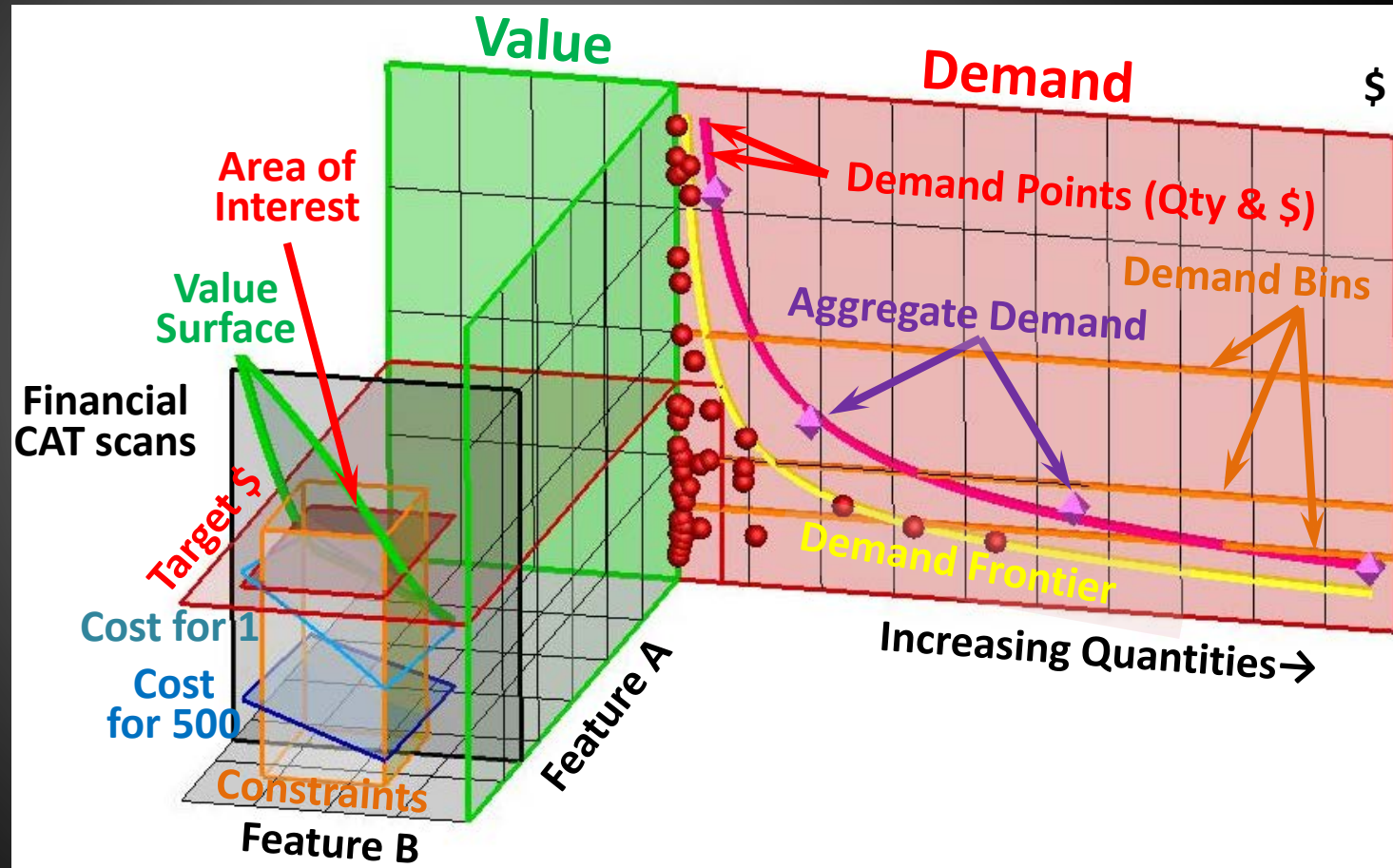


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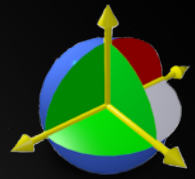


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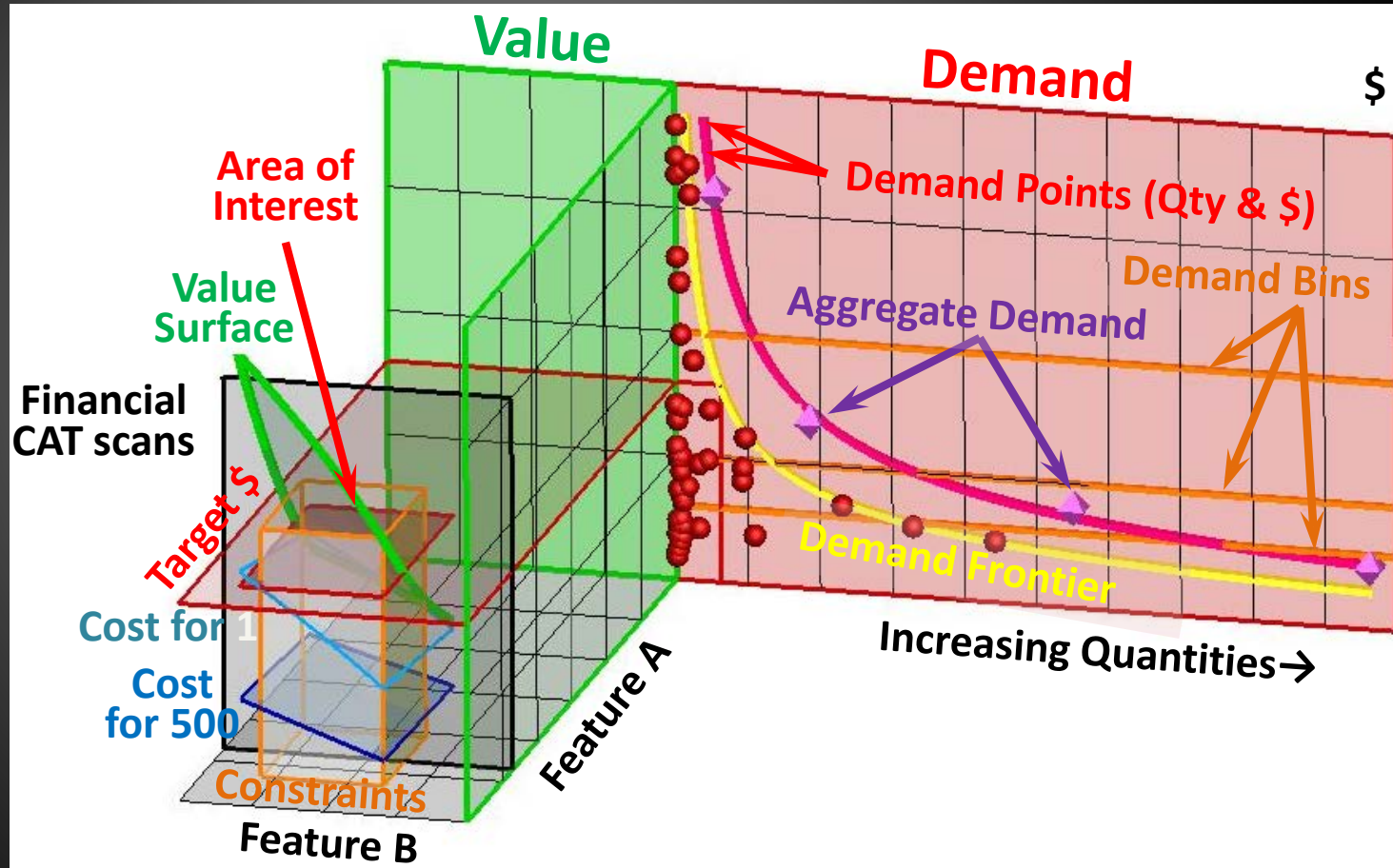


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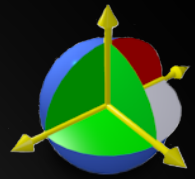


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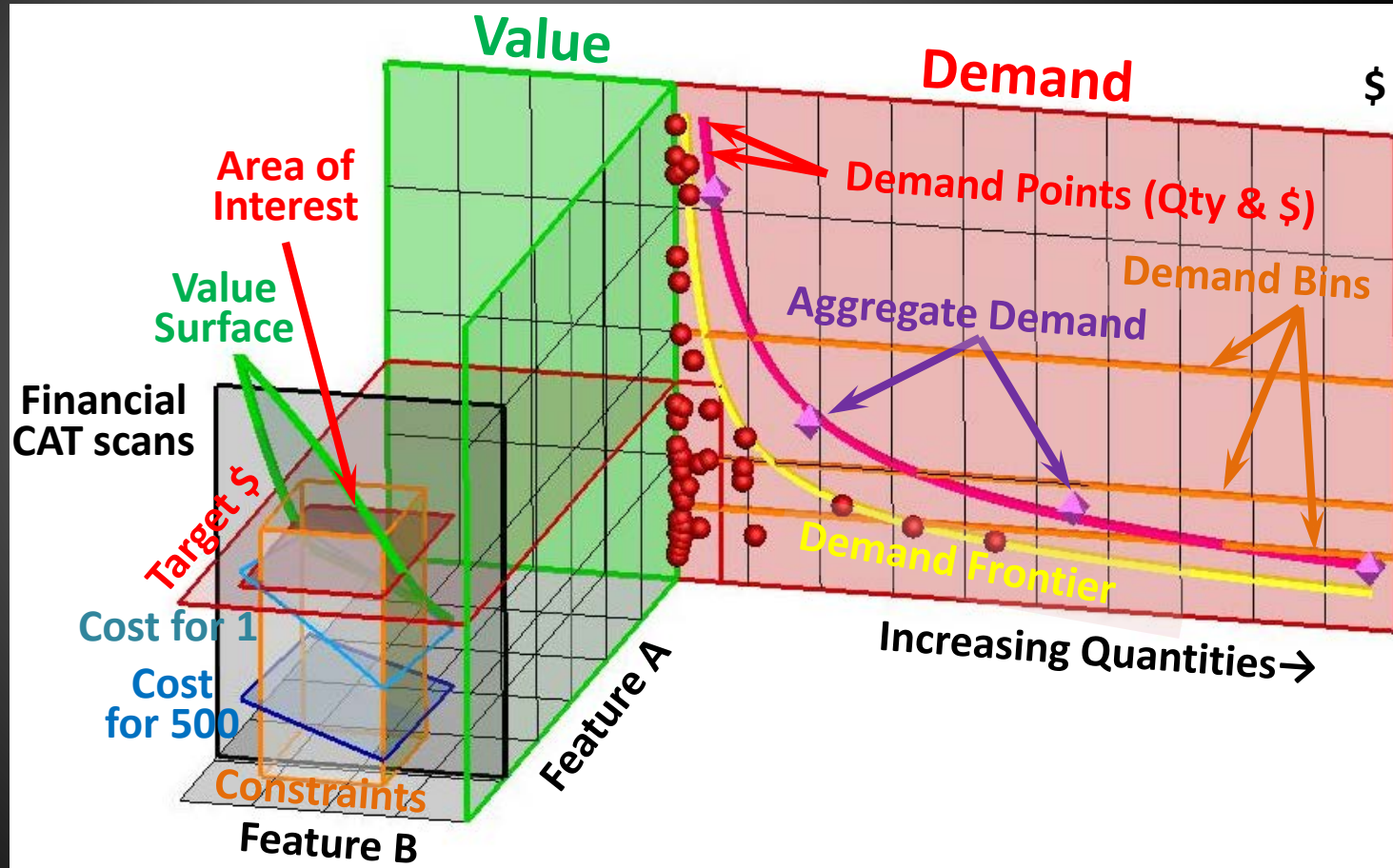


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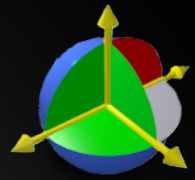


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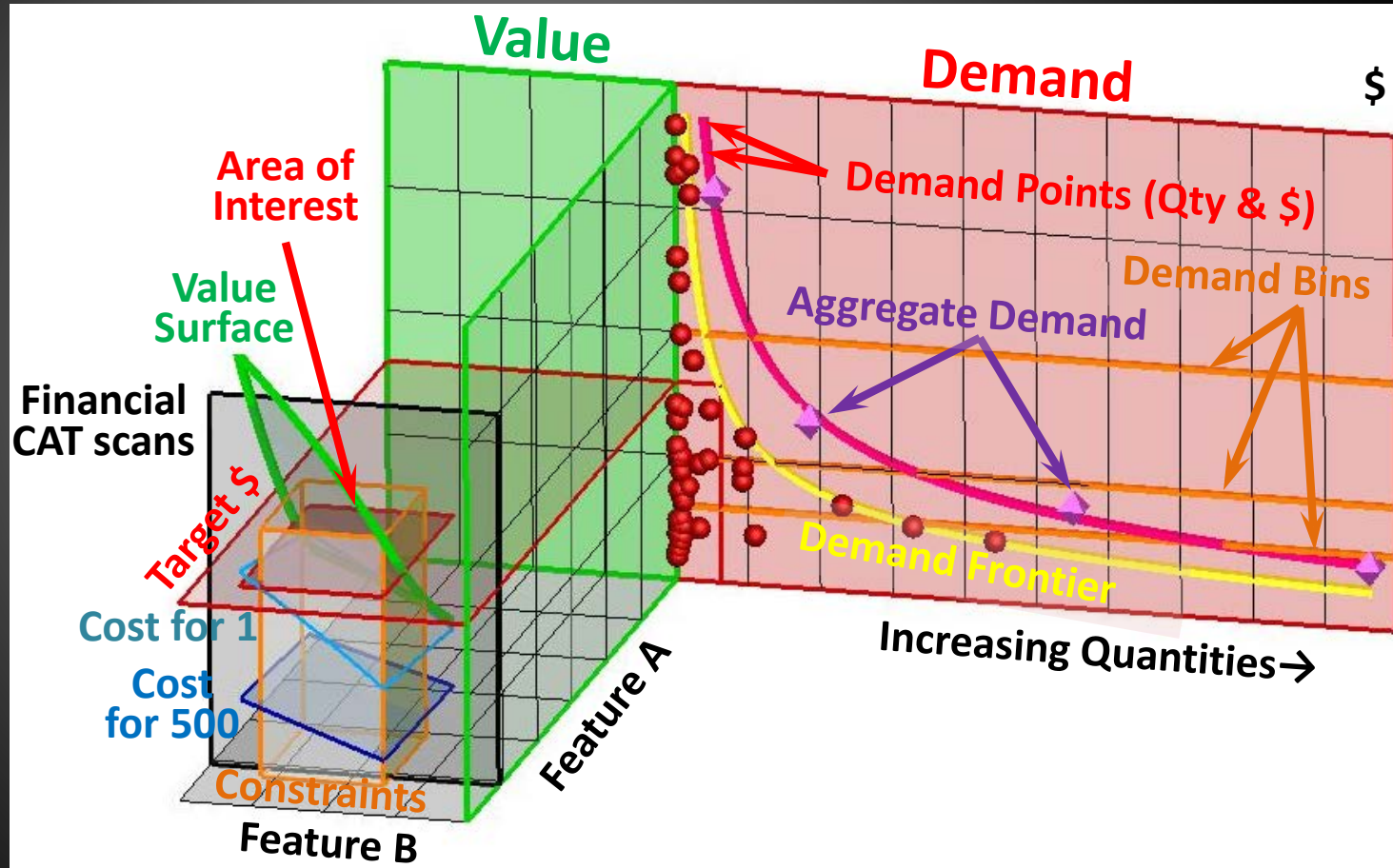


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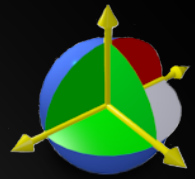


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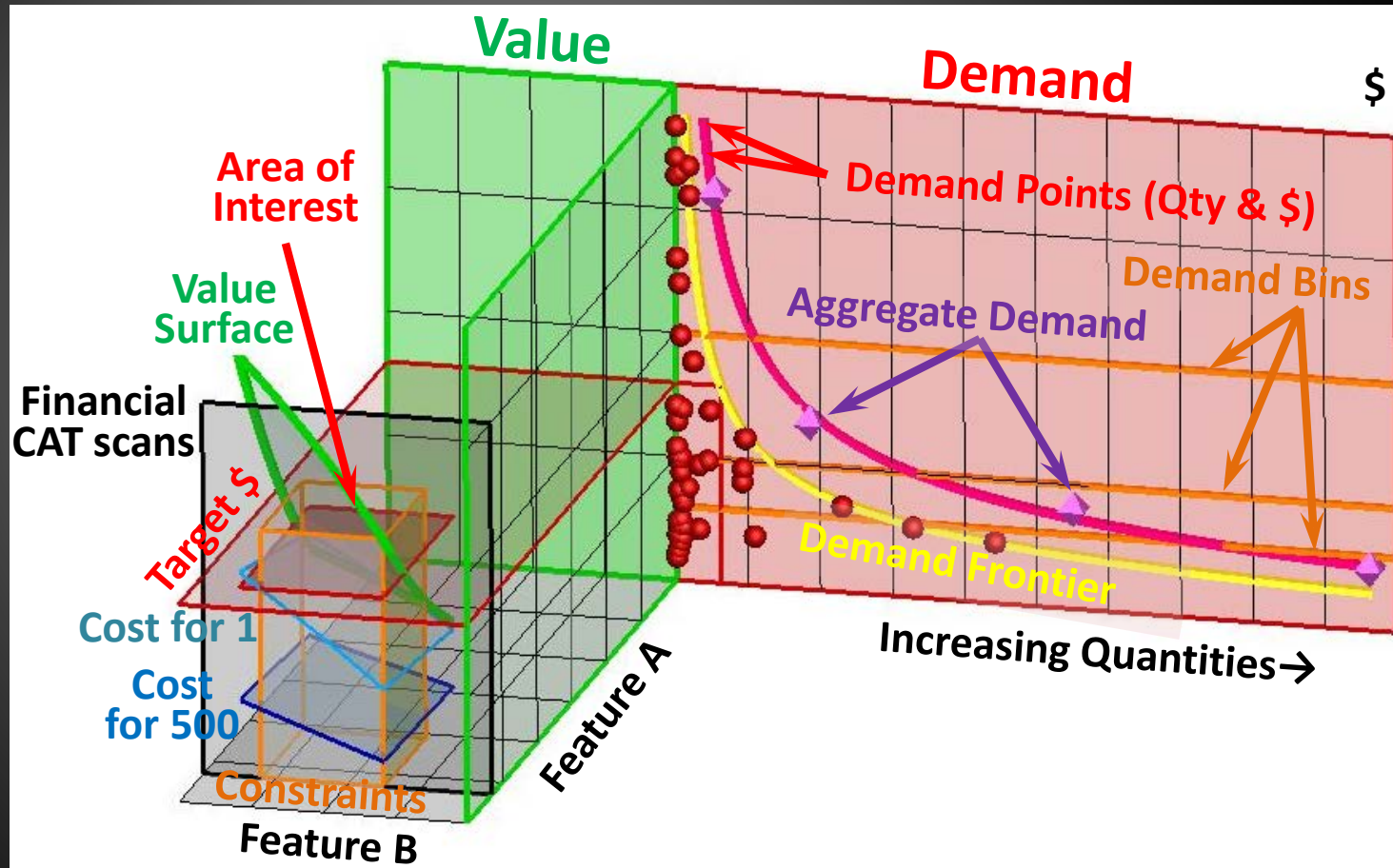


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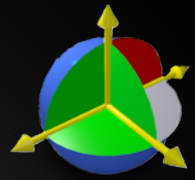


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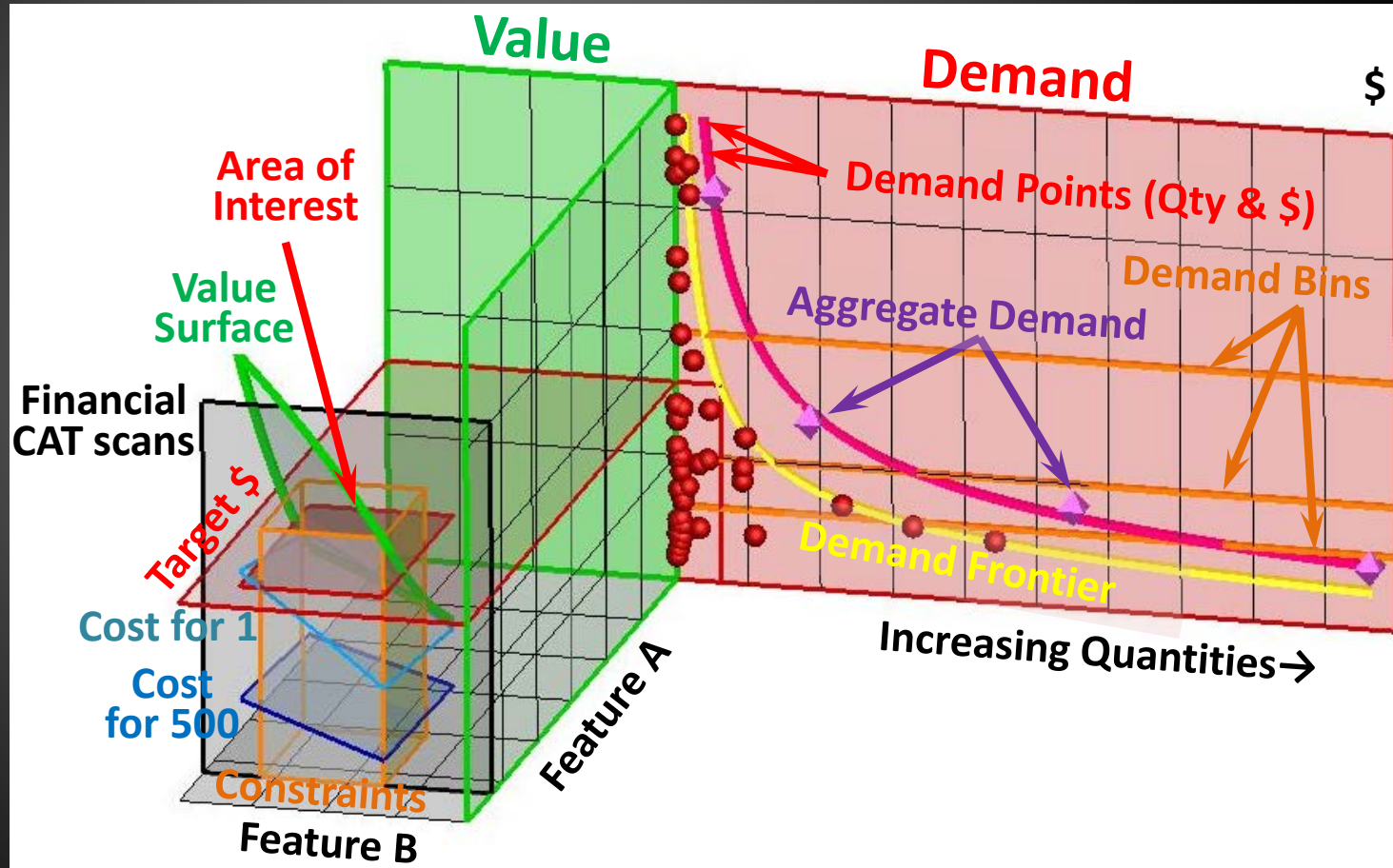


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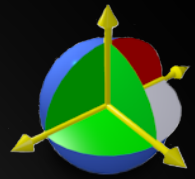


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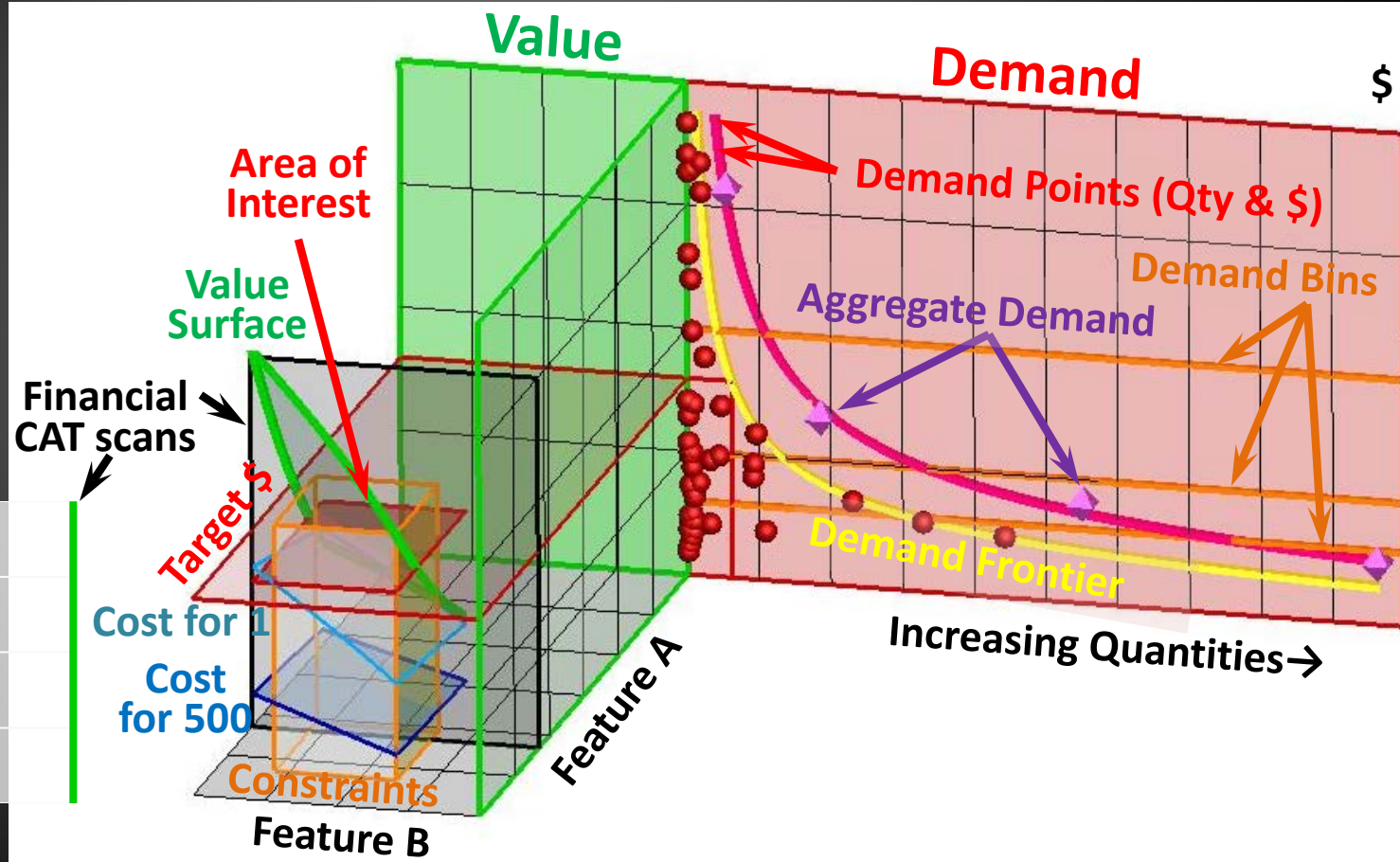
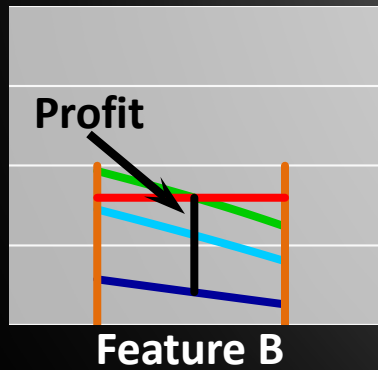


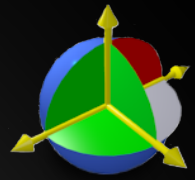
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Along the Feature A axis we uncover a Financial CAT scan that offers a tall Profit Line. We need to compare its profit potential to others in the analysis.





Financial CAT scans Conclusions

With respect to quantities and prices, Markets demonstrate

- Aggregate Demand Curves and Demand Frontiers
- Openings with respect to price

With respect valued features, Markets demonstrate

- Value Response Surfaces based on Value Estimating Relationships (VERs)
- Costs in the same terms as valued attributes
- Constraints brought about by physical, legal and technical forces

In 4D Systems where Demand Planes and Value Spaces abut one another

- Financial CAT scans allow comparisons between value, cost and constraints
- Financial CAT scans produce 1D Profit Lines with their associated attributes