

Global Leader in Live Entertainment

530 million fans attended live concerts

63 million fans connected with live concerts

37 countries

25,500 events

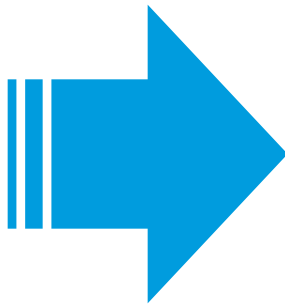
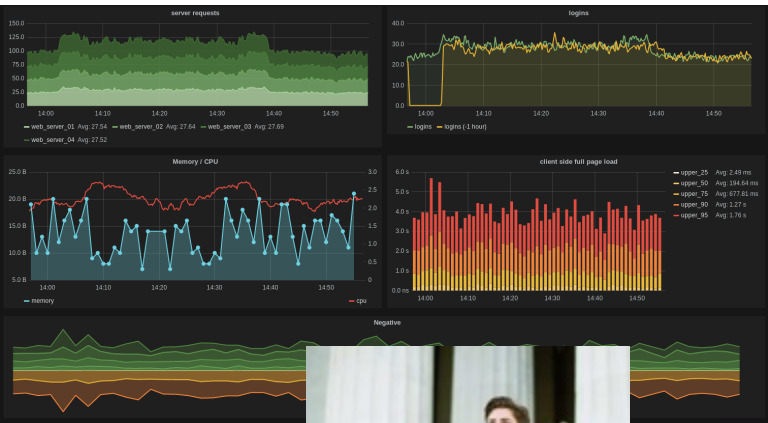
3,300 artists

\$25B GTV ticket value



WHAT DOES BRENT DO?

“If TechOps and Finance had a baby... that’s Brent” Jody Mulkey - All Hands Mtg Q216



WHY PUBLIC CLOUD AND NO MORE COLOCATION?

Type	Traditional	Next Generation	
Structure	Departmental	Service / Cell (two pizza, self organising)	← Write It, Run It, Support It & Dev's Like Current Tech
Culture	Inertia	Fluid / Game-able	
Corporate Focus	Profit	Disruption	← Many Small Competitors
Open source	Cost Reduction	Weapon (reducing barriers, centre of gravity etc)	← Iterate Fast, Dev Focused
Learning	Analysts	Ecosystem (ILC, alliances, suppliers etc)	
"Big" Data	Used	Driven By	
Resilience	N+1	Design For Failure	
Failure Testing	Disaster Recovery	Chaos Engines (Chaos Monkey, Master of Disaster etc)	
Capacity	Scale Up	Scale-out (distributed)	← Bad Colo Clouddynamics
Technique	Single Methods (agile or lean or six sigma)	Mixed Methods (agile + lean + six sigma)	
Deployment	Change Control	Continuous	← Features Faster Everywhere
Infrastructure	Enterprise Class	Commodity (volume operations of good enough)	← Script Driven Infrastructure

We are a cross departmental and cross organization team that has global IT Financial Management (ITFM) responsibilities for all cloud workloads across people, platforms and processes. In other words...

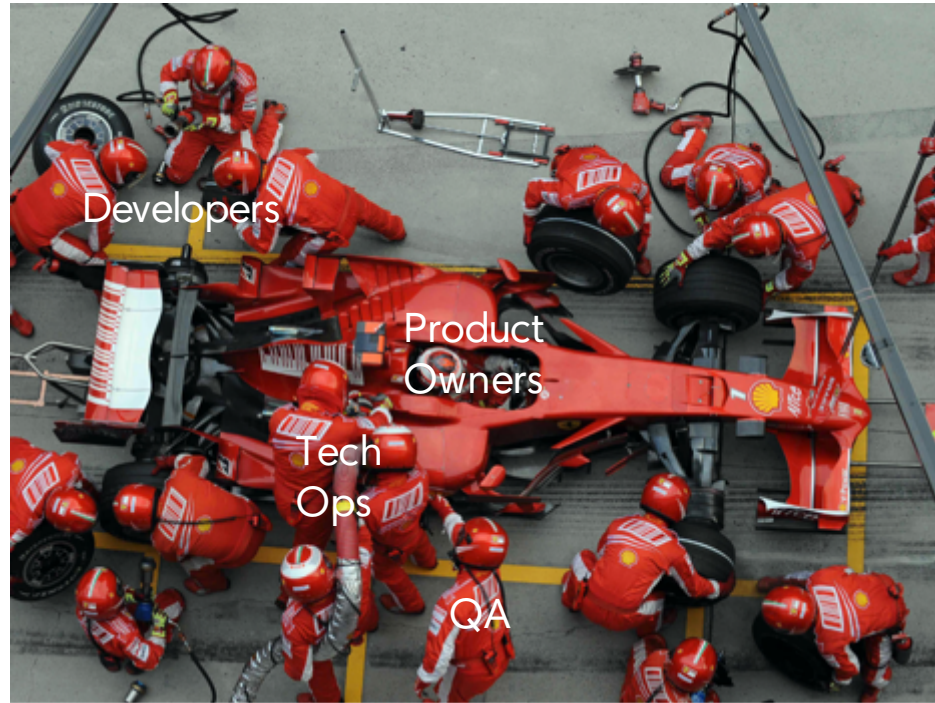
We are your advocates on the best way to use and buy cloud.



Team Credentials:



SOLUTION APPROACH - PUBLIC CLOUDS: RACING OPERATIONS COMMAND CENTER (ROCC)



“The car was awesome this weekend, so thank you so much to the team for this” Nico Rosberg F1 Team on the left are not the same skills/desires as Team on the right. There are few qualified active human resources at the monitors today. ROCC created the systems, algorithms, data integrations to optimize together with TM Product Owners

WHY HAVE A TECH OPTIMIZATION PLATFORM?

AWARENESS

What's your cost per transaction today?

How to measure operational surplus or overhead?

What is your target \$/TPD metric you are aiming for?

COMPARE

How did I do this month vs. last month on my product spend?

How to get biggest \$ savings gain with little risk and effort?

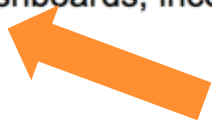
OPTIMIZE

Have data awareness to drive good habits, policies in place to prevent waste, fully utilizing JIT/JEI scripted HW as code.

*TPD=Transactions Per Day. JIT/JEI Just In Time and Just Enough Infrastructure. Hardware as Code

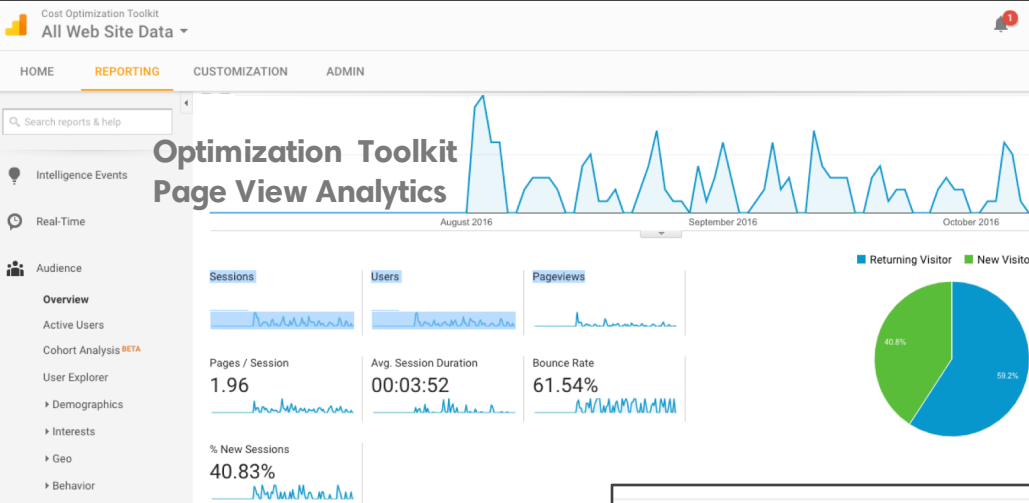
What is holding the shift towards more mature TBM practices

Practices to strengthen to enter next archetype

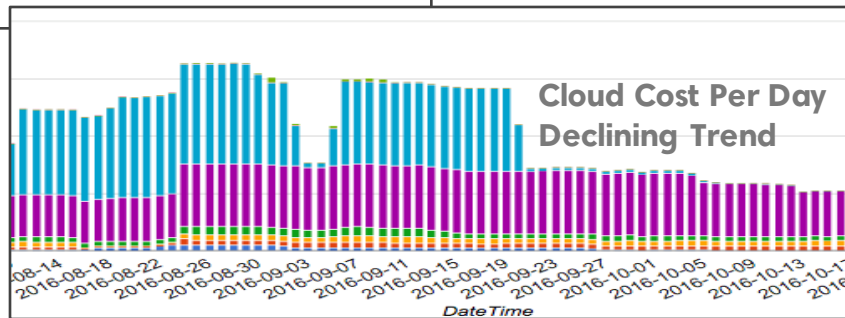
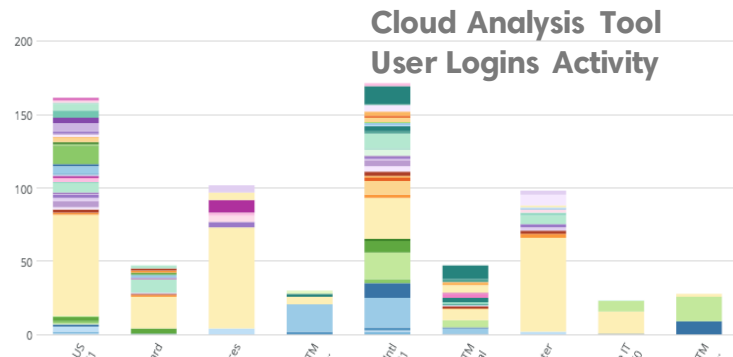
Service Orientation	▪ Offer richer set of standardized services (with tiered service levels and associate costs), that can meet >80% of business ▪ Complete service cost decomposition into unit cost, volume, and service level consumed ▪ Evolve show-backs into charge-backs reflecting true driver costs in pricing
Op Model and Organization	▪ Move towards commercial style management of IT services and clear separation between demand and supply ▪ Institutionalize partner-like business-IT interface 
Tools	▪ Achieve next level of rigor in inventory data quality and sustainable tracking process ▪ Measure usage down to consumption drivers fed via at least semi-automated process ▪ Improve operational and financial reporting via easy to use self-serve systems 
Management Capabilities	▪ Continuous improvement & change management for use of IT economics in decision making ▪ Performance management framework w/ cascaded metric, dashboards, incentives, and a culture of coaching staff ▪ Adoption of TBM data in product design (e.g., design to value)  

CORRELATE BEHAVIOR TO RESULTS

ROCC Team can see the Biz Units staff logging into the Cloud Analysis Tools & Cloud Optimization Toolkit and prove results of efforts by tracking cost efficiencies



708 Sum of LoginDays



PRODUCT PRINCIPLES - BIZ METRICS + CONTEXT

What to run that workload on and Why?

TRAFFIC MGMT	?	?	?	?	?	?
WEB SERVERS	?	?	?	?	?	?
APPLICATION	?	?	?	?	?	?
USER DB	?	?	?	?	?	?
ANALYTICS DB	?	?	?	?	?	?
QUEUE	?	?	?	?	?	?
	Dev VM	CI/CD Tests	QA Server	Stage Env	Prod AZ	HA/DR AZ

WHY IMPORTANT TO PRODUCT OWNERS?

Clouddynamics and procurement misalignment

November traffic to Amazon.com

Provisioned capacity

76%

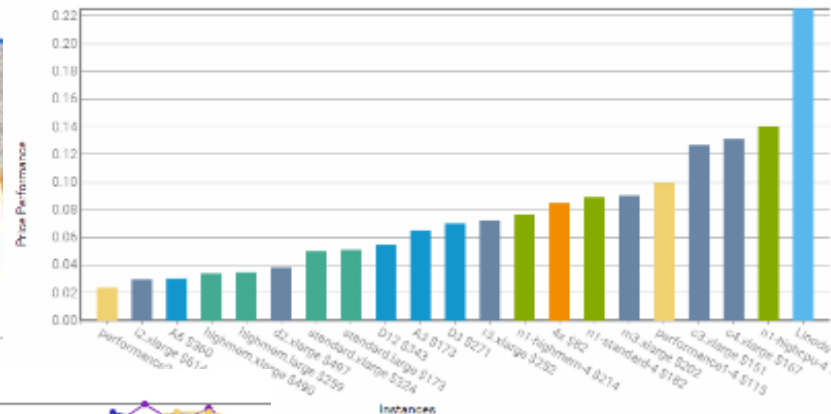
24%

ROCC Team is modeling and solving these things for you so you can focus on the product and experience.

Remove cloud confusion around cost, value, and work.

Price performance ratio varies by 1000+%

By Price Performance



By Price Performance



Same instance on same provider price performance varies by 60+%

ITBM TECC FINANCIAL EVIDENCE -



Unit Costs vs. Benchmarks

Unit costs are simply the direct costs on a per-unit basis for key (and generally commoditized) components of your services.



Fixed vs. Variable Cost Ratio

By maintaining a high proportion of your costs as variable, often you can more cost-effectively scale up or down based on demand.



Direct vs. Indirect Cost Ratio

The relative proportion of your indirect costs to your direct costs indicates the degree to which your business employs shared resources.



Capex Ratios

Capex (capital expenditure) not only includes hardware and software, but also the costs to deploy them and certain application development costs.

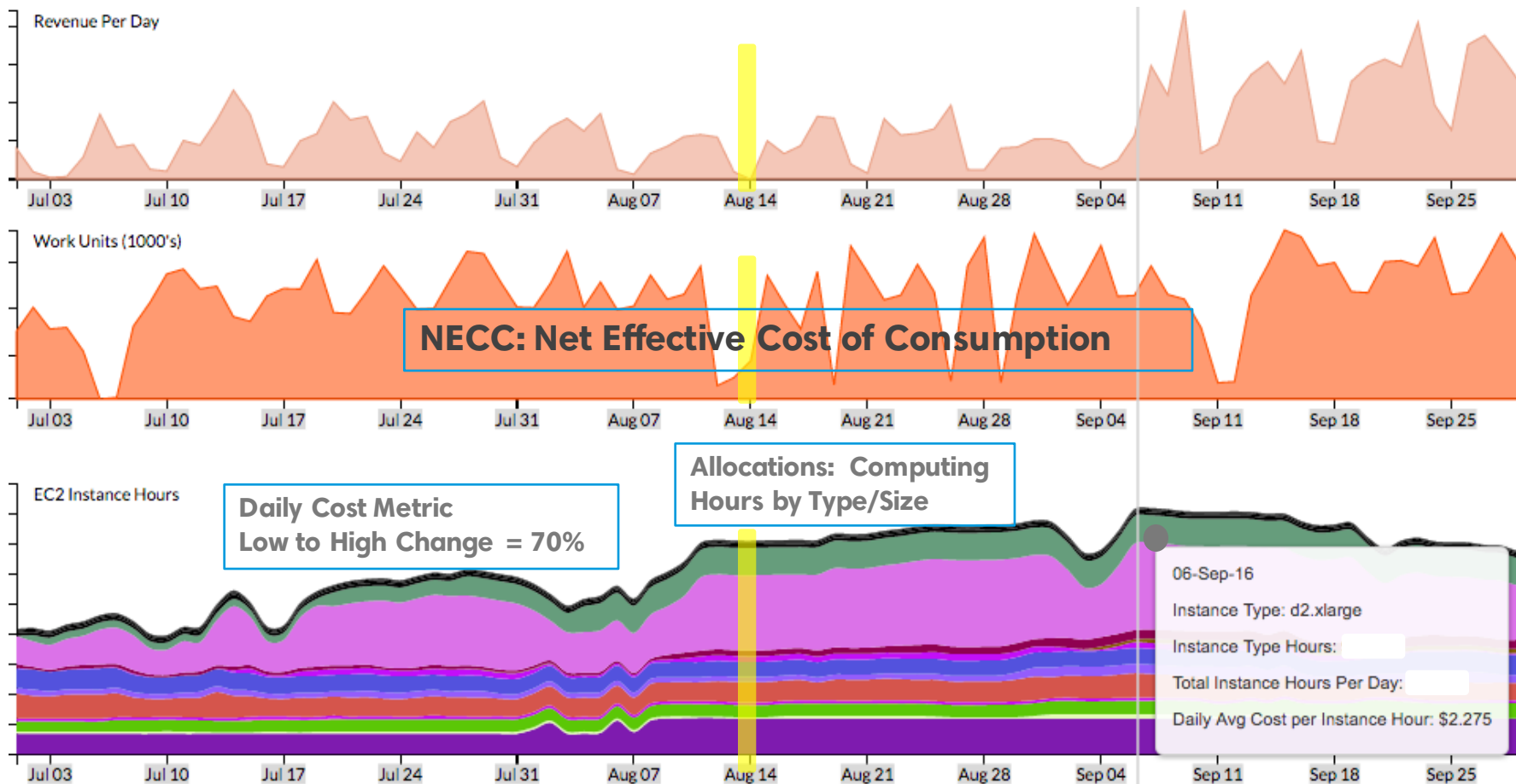


Budget vs. Actuals and Forecast

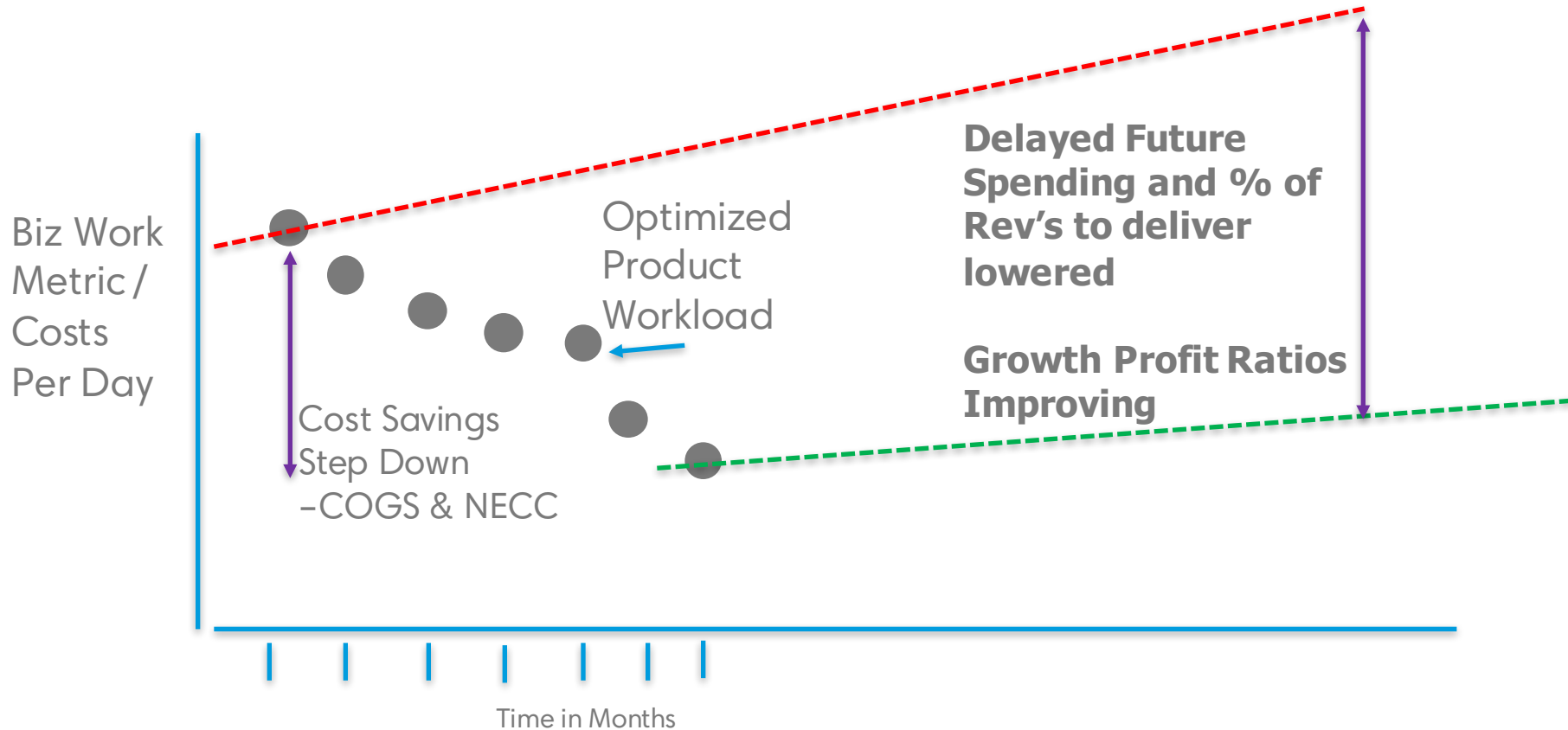
Forecasting is the process of estimating how much you expect to spend in a given period or for the remainder of a project.

*TECC: Total Effective Cost of Consumption

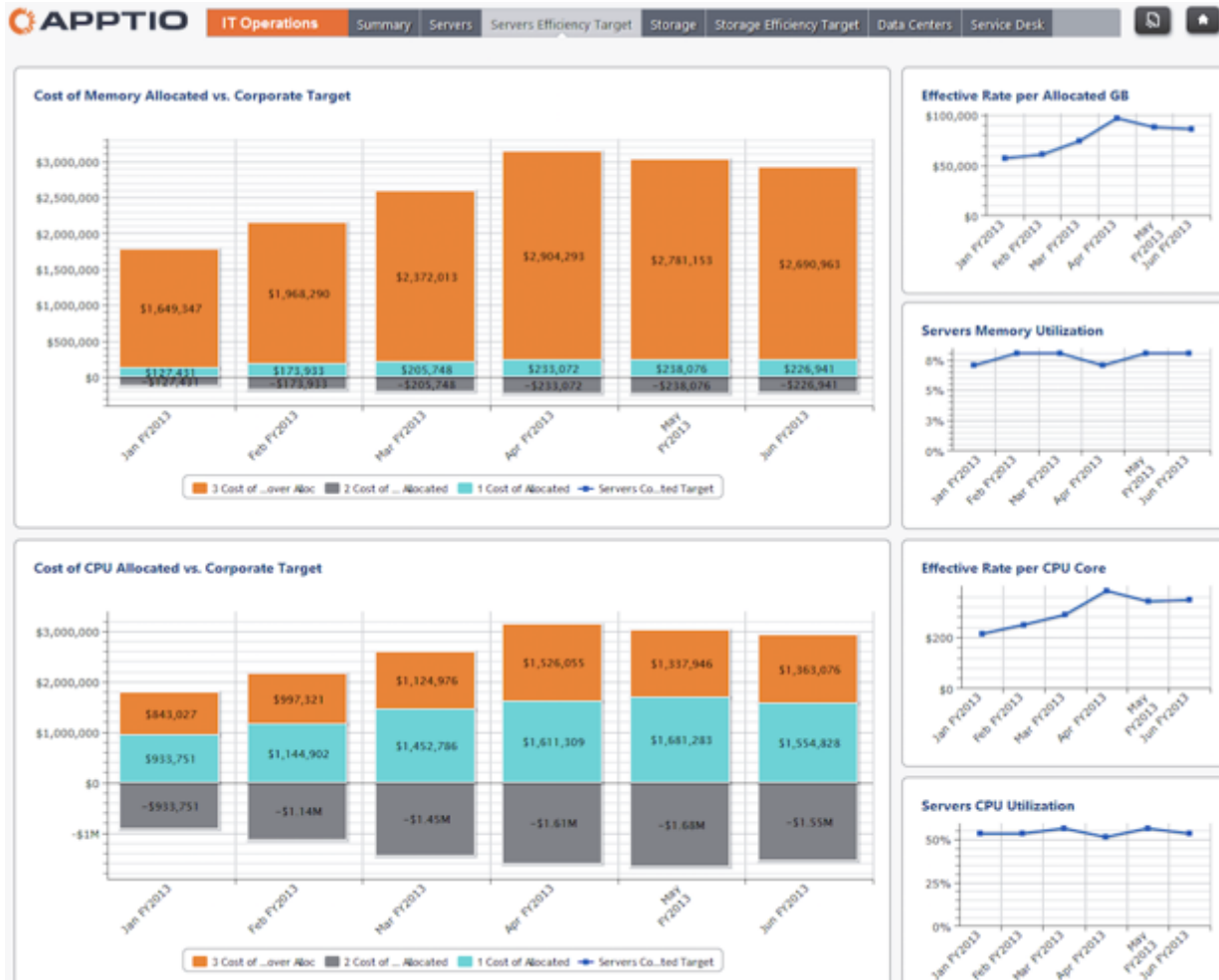
CONSUMPTION IS KEY



COST EFFICIENCY DASHBOARD - CONCEPTUAL



ITFM TECC FINANCIAL EVIDENCE -



FINANCIAL EVIDENCE REPORTING

What Do The Financial Results of Product Fitting Look Like?

Get more work for less costs....continuously

Cost by Services and DateTime

Active Filters :

Proc



Cost Model=

Amortization=Actual Cost

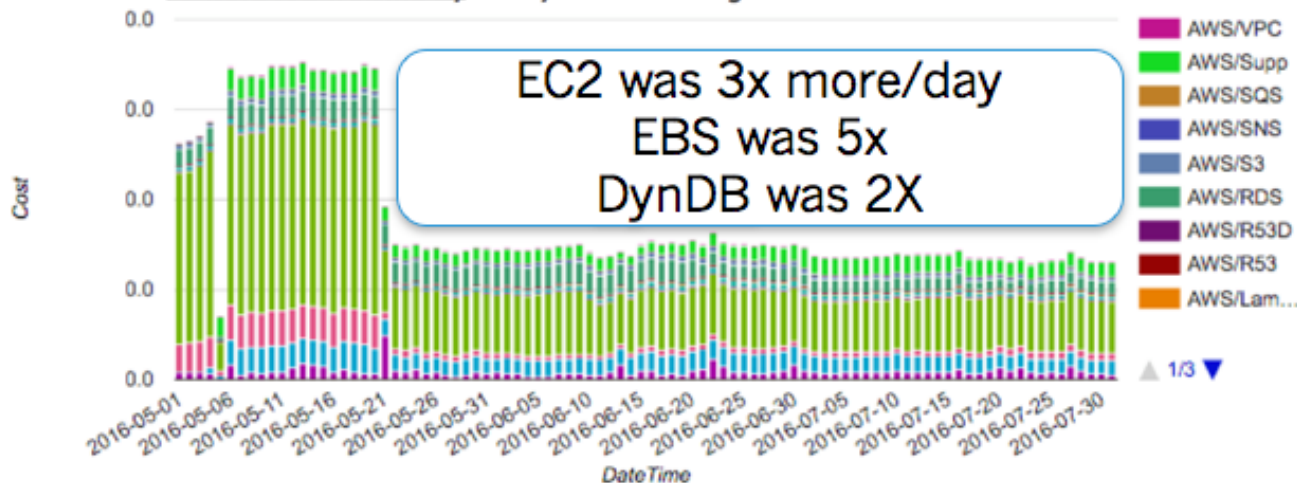
Resolution=day

Allocation Rules=Applied

Uncategorized=Show

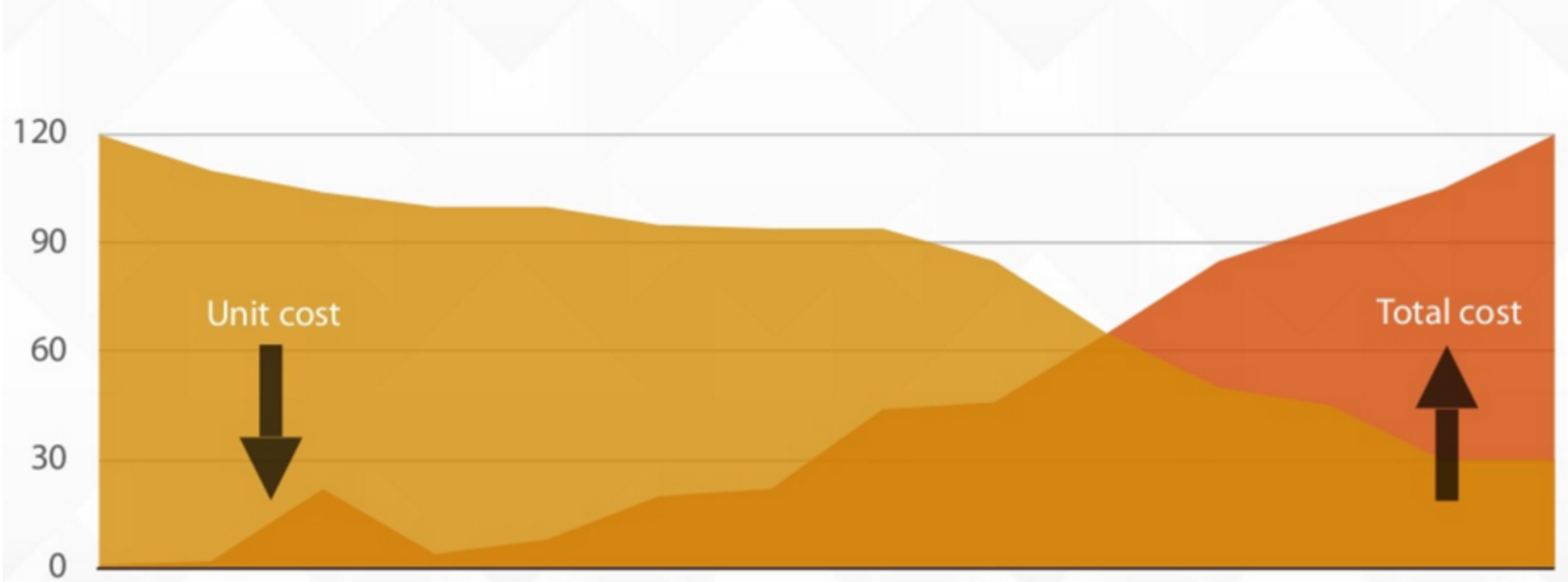
Total Cost:

Waste and Product Fitting Only! This is what you want to see the next day after you make changes.



GOALS: ACCURATE VALUE ECONOMICS METRIC PER UNIT COSTS

By tracking the work, value, cost of tech unit, now we have real proof of how much value we get from IT budget. COGS, \$/GB RAM Hr or \$/Ticket or \$/User



THE RESULTS AND KPI

44% off instance hour costs since May peak

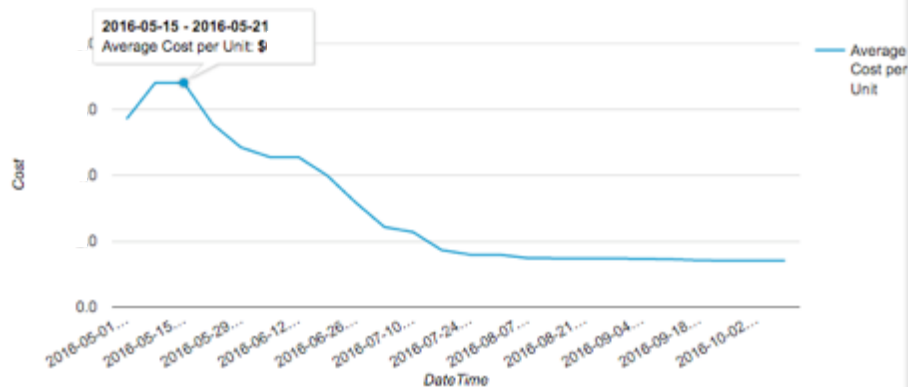
72% off GB RAM hour costs

80% off CPU core hour costs for that Product's platform costs

Cost by DateTime

Active Filters :

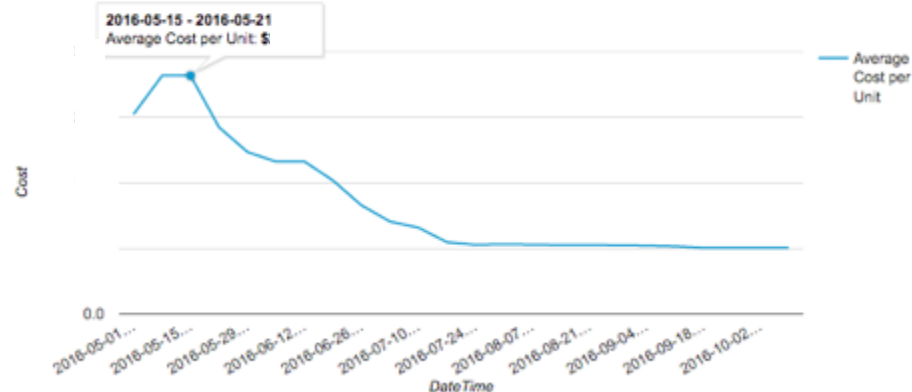
Cost Per CPU CoreHour



Cost by DateTime

Active Filters :

Cost Per GB RAM Hour



DESIRED RESULTS FINANCIAL EVIDENCE

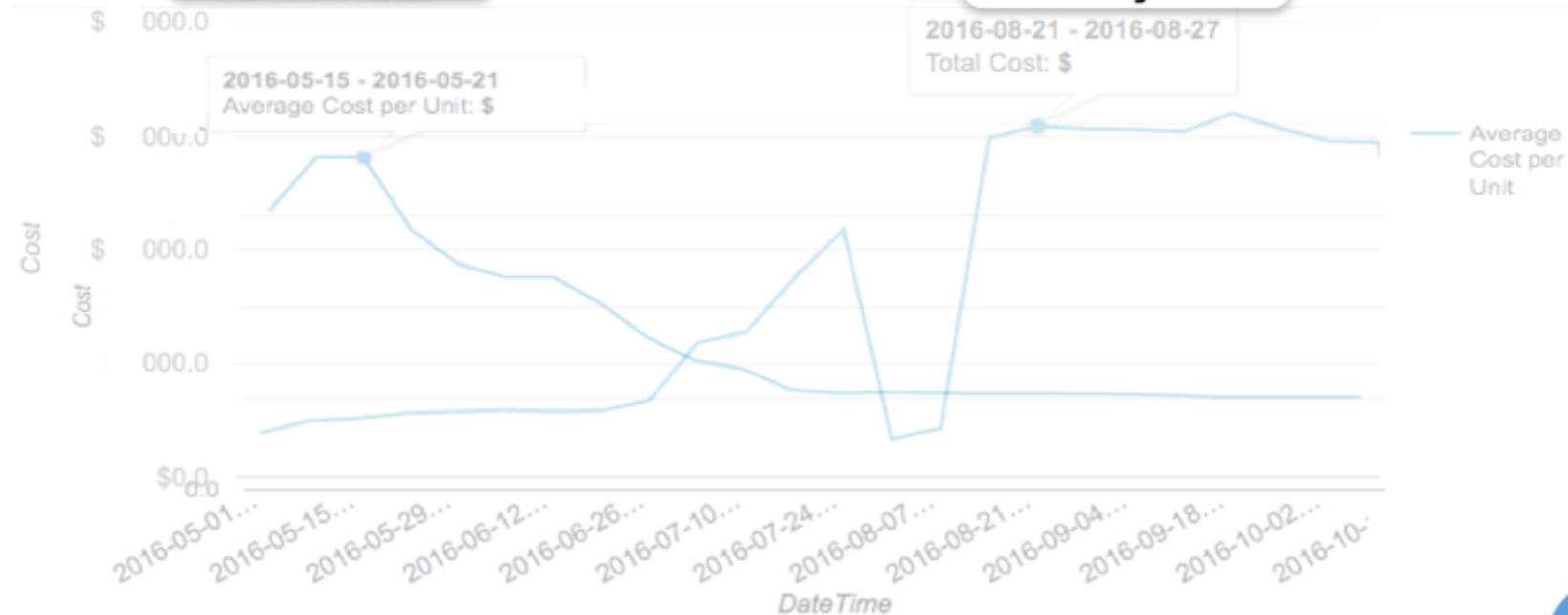
Cost by Date/Time

Active Filters :

Cost Per GB
RAM Hour

Cost Model:
resolution=week Allocation Rules=Disabled

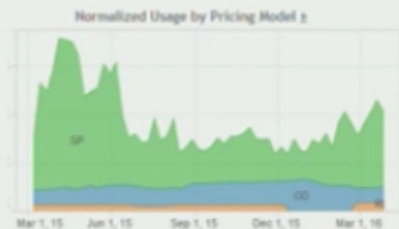
Total
Monthly Cost



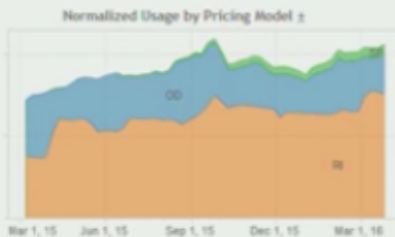
TM - DESIRED STATE PURCHASE METHODS

Different Purchasing Options in a single company

Data Science



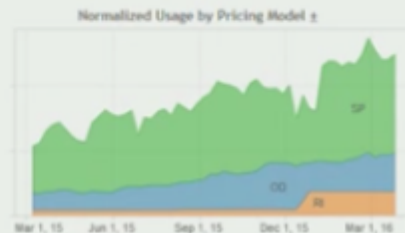
Internal IT



New app development



Test and Development



What should It look like?

Depends - Clouddynamics

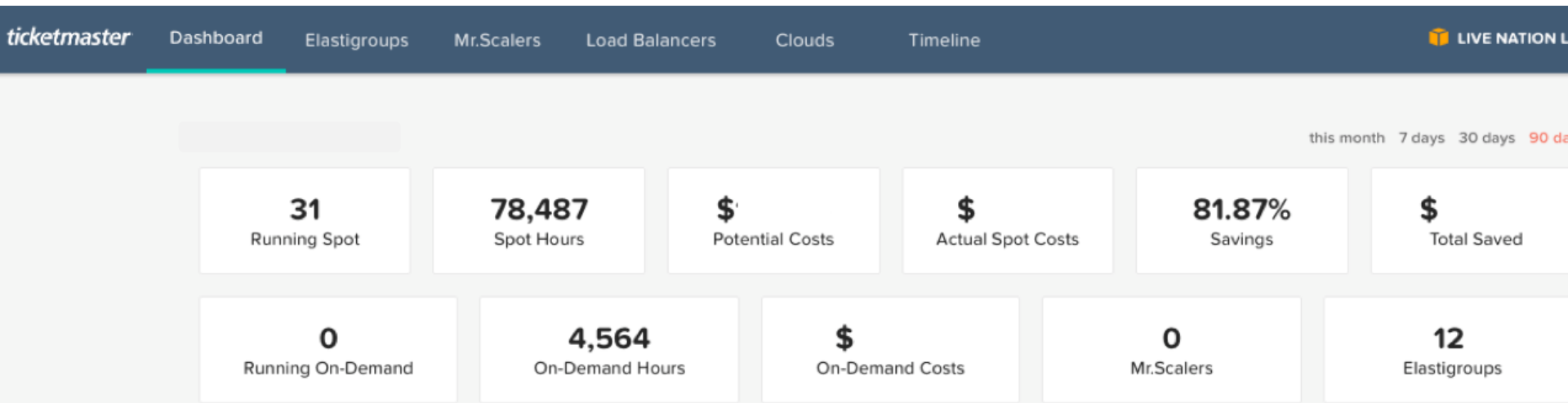
- Behavior
- Spikes
- (Predictable/Unpred)
- Short Lived
- Commit Base
- Rent Spikes
- Spot First Strategies
- Abstract EC2 from Apps/Services using K8s/CoreOs

Green = Spot
Blue = On Demand
Orange = Reserved 1 Yr

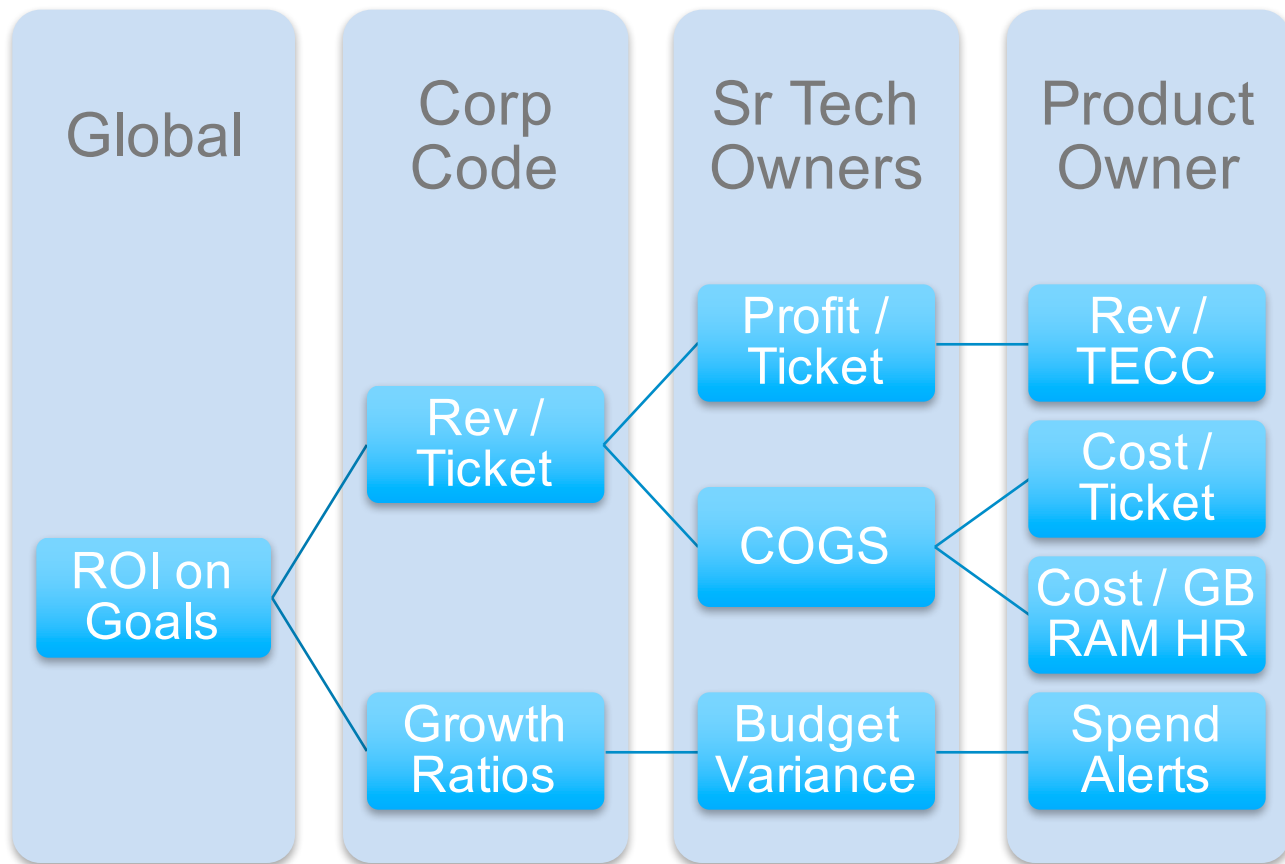
TM - DESIRED STATE PURCHASE METHODS

EC2 80% off Promo Code

****Workload Viability and Code Capability Matching Required**

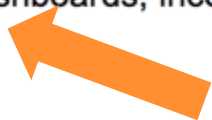


CASCADE OF DASHBOARDS & METRICS BY PERSONA



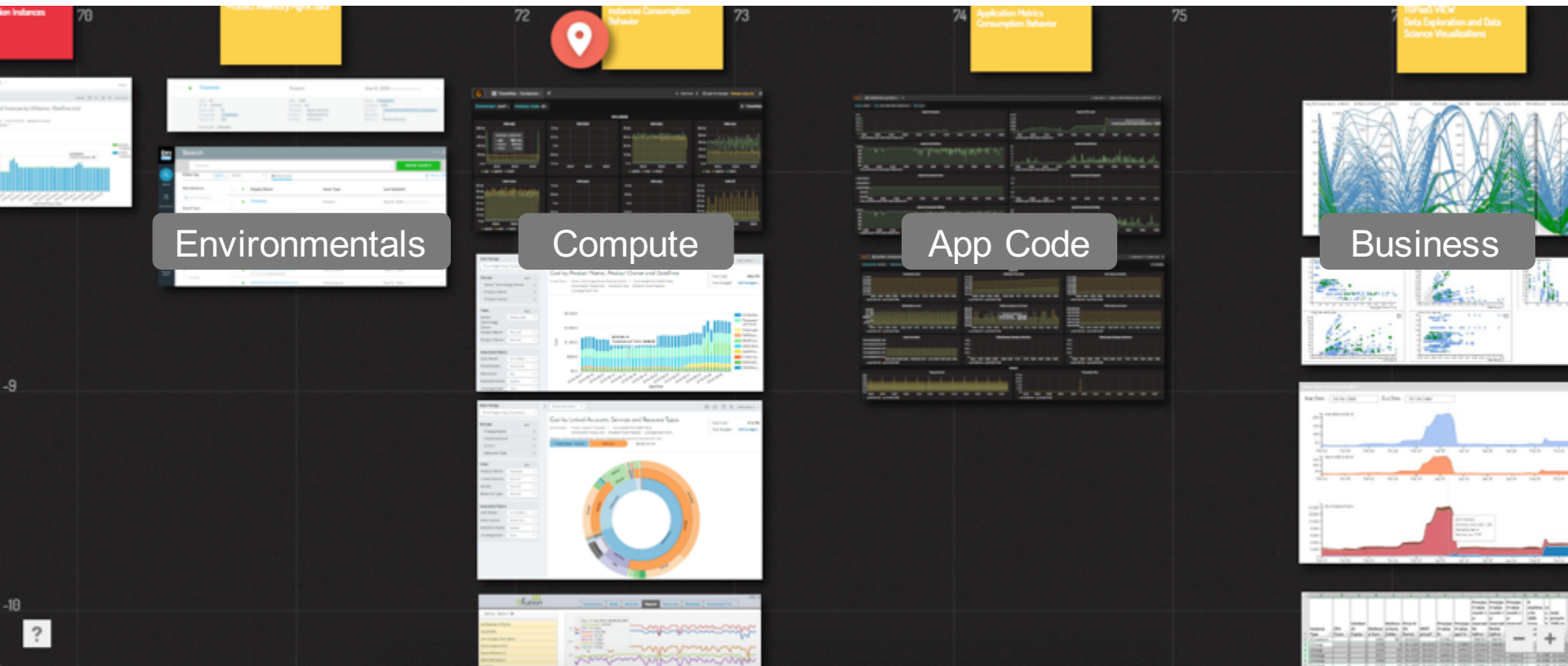
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ROCC - RACING OPERATIONS COMMAND CENTER

WHAT DOES IT LOOK LIKE?



Q&A?

Thank you for attending

Universe.com charitable solution

Brent Eubanks

