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The Economics of Migrating from VMware to OpenStack

presented by

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Sr. Strategic
Product Manager

- Worked with OpenStack since the Essex/Folsom days…
- An 8½ Year Racker – 100% OpenStack and Kubernetes Focused
- First 7½ Years as SME Solutions Architect for OpenStack and Kubernetes
- Now Part of the OpenStack Business Unit
- Product Manager focusing on strategy, go-to-market, customers, and partners

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Agenda

Introduction

Understanding the Costs

Case Studies

Alternative Approaches

Wrap-Up and Q & A

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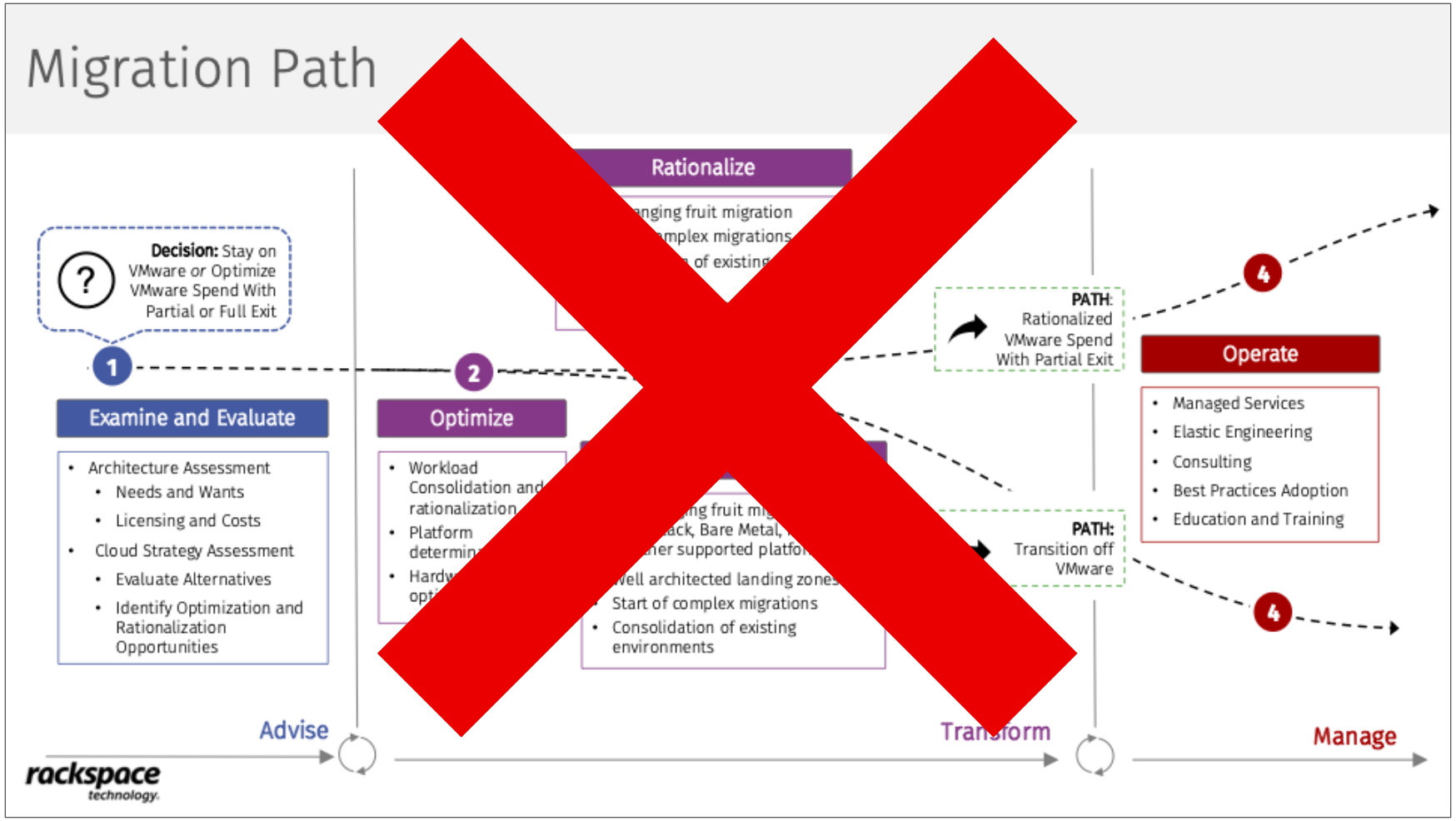
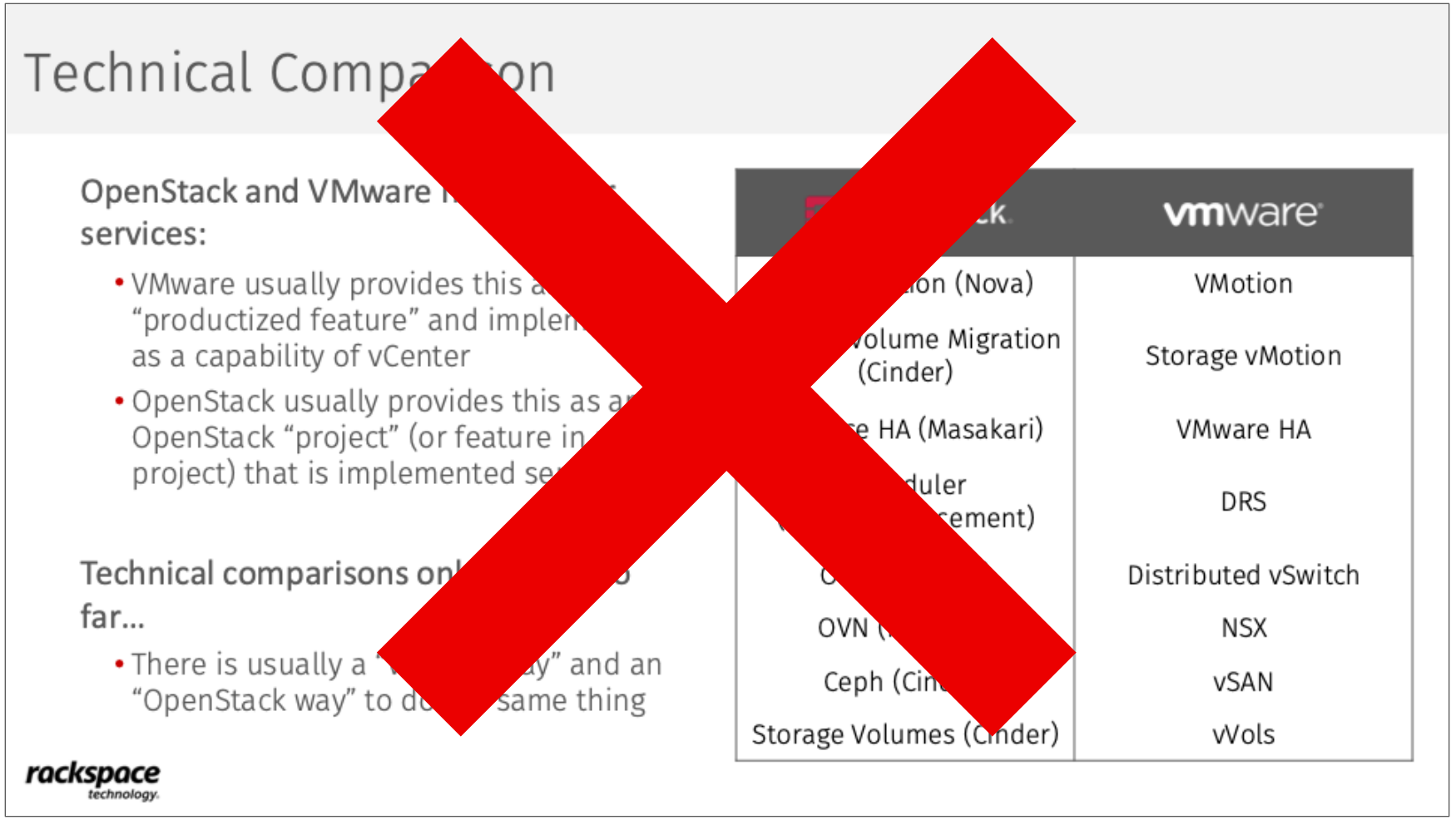
Things I'm NOT going to talk about today…



Migration processes…

Things I'm ALSO NOT going to talk about today…



Feature comparisons…

We are going to talk about COST

- What goes in to calculating migration costs?
- How much does it *actually* cost to migrate?
- How do different migration strategies affect migration cost?
- What are some examples of cost savings models?
- What can you do with your cost savings?

The Economics of Migrating to OpenStack

- Broadcom's price model changes have significantly increased annual VMware operating costs.
- OpenStack is a viable VMware replacement in most cases
- The resulting savings can be realized almost immediately when migrating

What goes into calculating costs?

- Operations?
- Licensing?
- Support?
- Switching costs:
  - Training?
  - Migration costs?
- Application modernization?
- Hardware/platform costs?

Which should we include?

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Understanding how each platform is priced

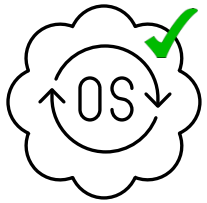
The cost structure of supporting OpenStack is different:

- We are using 100% open-source OpenStack software where there are no software licensing costs or subscriptions
- OpenStack costs are based around the number of hosts that are part of a 24 x 7 x 365 fully-managed

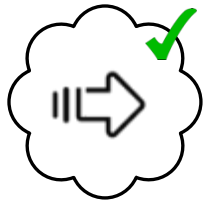
The cost structure of VMware has changed:

- VMware has consolidated pricing from a more *a la carte* model to a more comprehensive subscription model
- The two main pricing tiers (VCF and VVF) are now priced per-CPU-core, with some features (e.g. vSAN) priced as an uplift
- There *are* lower-priced offerings, but they are being bound by restrictions to limit their applicability in lots of cases
- There is some nominal ability to file support cases included, but this can be dependent on the vendor from which VMware is acquired

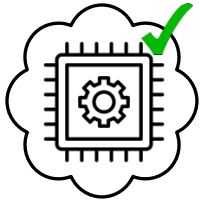
How will we measure costs?



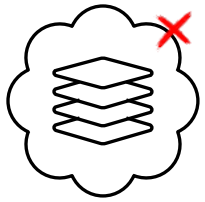
Cloud Operating System and support



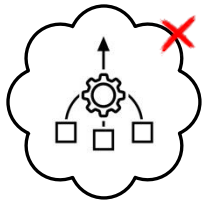
VM migration tooling and labor



Hardware re-use



Application modernization



Workload consolidation or refactoring

Hardware of infrastructure upgrades

Our Base OpenStack Migration Cost Model

- We are going to assume 100% hardware re-use (including storage)
- We are going to include licensing+support as the “Operating Cost”
- We are going to assume that we migrate 100% of displaced VMs
- We are going to include tooling+labor for VM migrations

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Case Studies

Case Study 1

“Small” Deployment

Environment Size

Sites:	1
Hosts:	40
Virtual Machines:	680
CPU Cores:	1280

Migration Strategy

- 100% of VMware estate to be migrated to OpenStack
- Planning to start immediately with Host and VM migration to start in Year 2
- Migration rate approx. 10 ESXi Hosts/Month and 200 VMs/Month

Costs

VMware Licensing Costs:	$384,000/year
OpenStack Migration Costs:	$68,000 total
OpenStack Operating Costs:	$134,850/year

Notes

- VMware Licensing Costs are discounted 15% off list price
- OpenStack Operating Costs are relative to Rackspace’s operating model
- OpenStack Migration Costs are a 70%/30% mix of automated/manual migration

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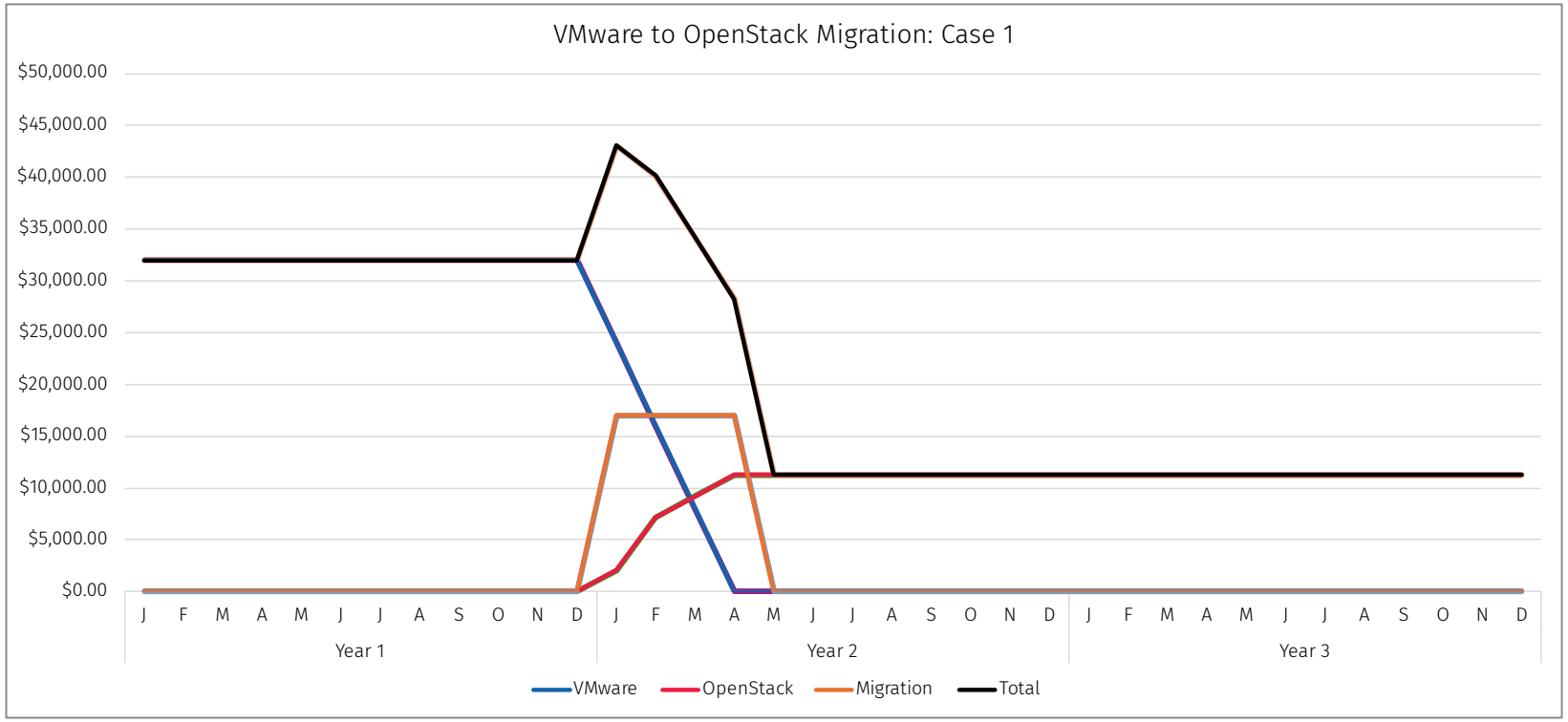
Case Study 1 Details



Notes:

- Total yearly costs:
  - Year 1: $384,000.00
  - Year 2: $235,526.13
  - Year 3: $134,859.00 ← *65% Reduction in Operating Cost*
- Represents a transition from 100% VMware → 100% OpenStack in Year 2
- Total Year 2 Costs (VMware + OpenStack + Migration) *less than 1 Full Year of VMware*

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Case Study 2

“Medium” Deployment

Environment Size

Sites:	2
Hosts:	60
Virtual Machines:	680
CPU Cores:	1280

Migration Strategy

- 100% of VMware estate to be migrated to OpenStack
- Planning to start immediately with Host and VM migration to start in Year 2
- Migration rate approx. 5 ESXi Hosts/Month and 100 VMs/Month

Costs

VMware Licensing Costs:	$864,000/year
OpenStack Migration Costs:	$192,000 total
OpenStack Operating Costs:	$207,300/year

Notes

- VMware Licensing Costs are discounted 15% off list price
- OpenStack Operating Costs are relative to Rackspace’s operating model
- OpenStack Migration Costs are a 70%/30% mix of automated/manual migration

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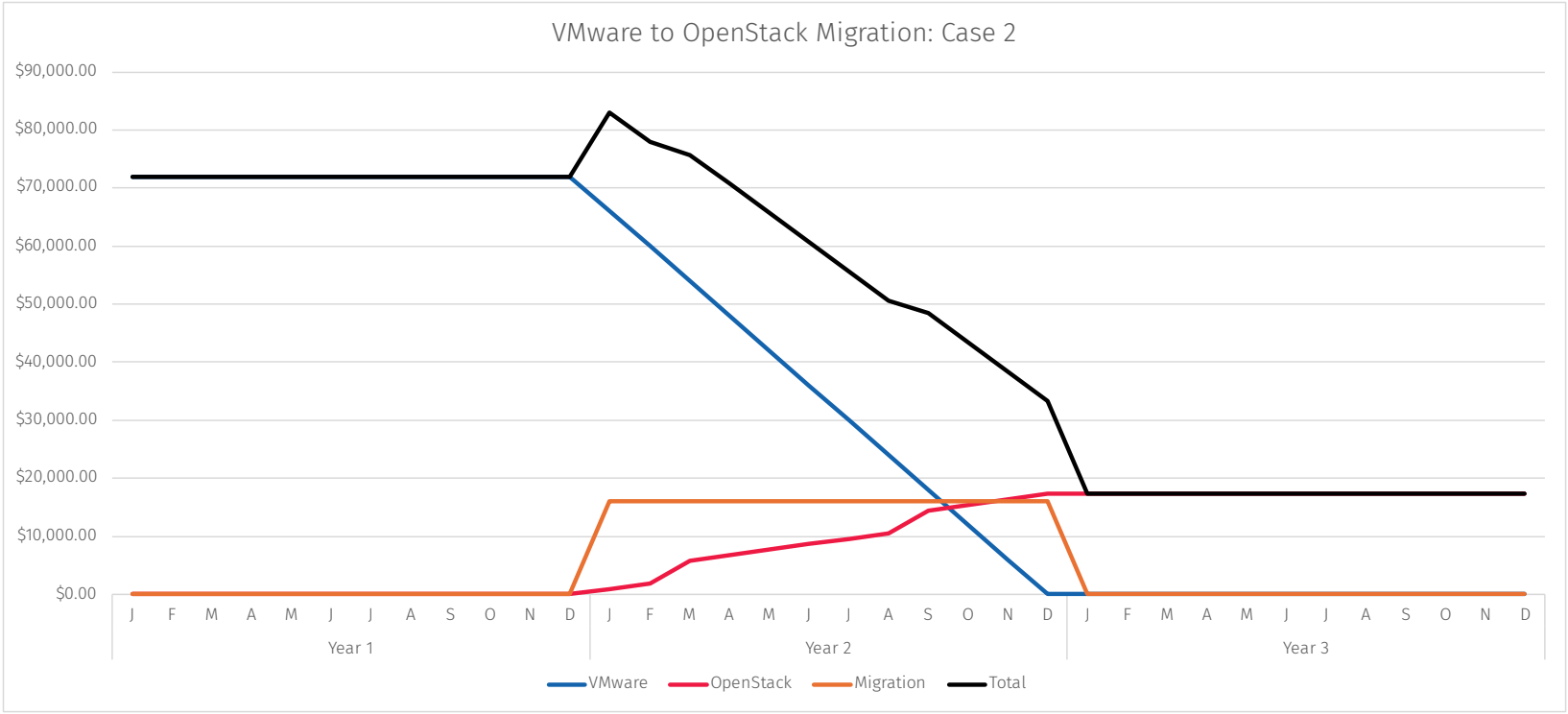
Case Study 2 Details



Notes:

- Total yearly costs:
  - Year 1: $864,000.00
  - Year 2: $703,166.67
  - Year 3: $207,300.00 ← *76% Reduction in Operating Cost*
- Represents a transition from 100% VMware → 100% OpenStack in Year 2
- Total Year 2 Costs (VMware + OpenStack + Migration) less than 1 Full Year of VMware

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Case Study 3

“Large” Deployment

Environment Size

Sites:	16
Hosts:	325
Virtual Machines:	7,400
CPU Cores:	10,400

Migration Strategy

- 100% of VMware estate to be migrated to OpenStack
- Migration to start immediately with Host and VM migration spread across 3 years
- Migration rate approx. 10 ESXi Hosts/Month and 200 VMs/Month

Costs

VMware Licensing Costs:	$2,592,000/year
OpenStack Migration Costs:	$780,000 total
OpenStack Operating Costs:	$932,730/year

Notes

- VMware Licensing Costs are discounted 15% off list price
- OpenStack Operating Costs are relative to Rackspace’s operating model
- OpenStack Migration Costs are a 70%/30% mix of automated/manual migration

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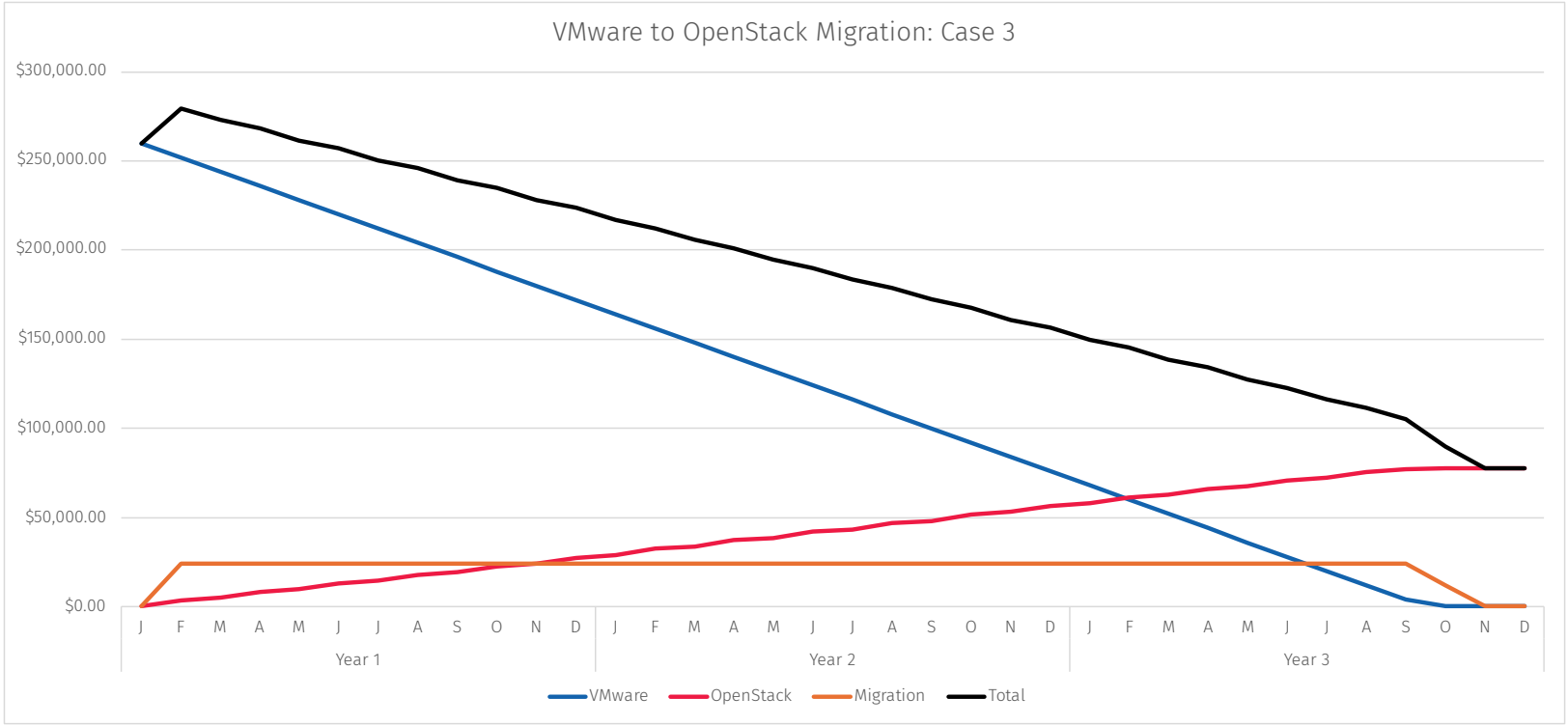
Case Study 3 Details

46% reduction in operating costs overall from 100% VMware to 100% OpenStack



Notes:

- Many Control Planes Represent an almost “Worst Case Scenario” for OpenStack costs
- Represents a transition from 100% VMware → 100% OpenStack across 3 Years
- Cost of Each Year (VMware + OpenStack + Migration) *less than 1 Full Year of VMware*

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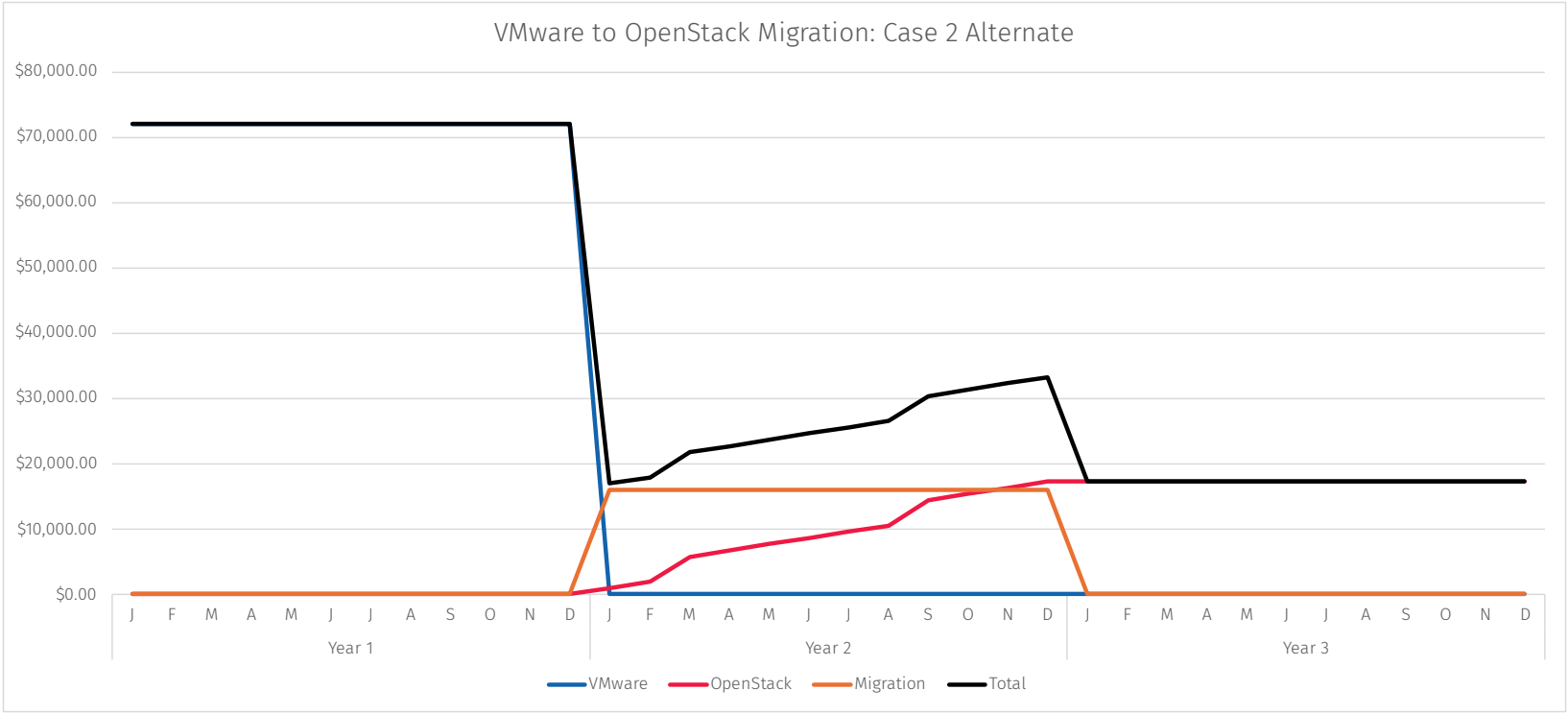
Alternative Approaches

An alternate approach to Case Study 2

What if the customer stopped licensing VMware on day 1 of the migration?



Notes:

- Total yearly costs:
  - Year 1: $864,000.00
  - Year 2: $291,166.67
  - Year 3: $207,300.00
- Still represents a transition from 100% VMware → 100% OpenStack in Year 2

Now a 66% Reduction in Operating Cost for Year 2

Same 76% Reduction in Operating Cost for Year 3

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A measurable acceleration in savings

- This considers what if the customer stopped licensing VMware on day 1 of the migration?

- What if some of the approx. $570,000 savings was used for new hardware instead?
  - Higher core-count CPUs
  - Fewer servers

- This could lower the Year 3 costs even more and realize savings even faster

Alternative Strategies

- If possible, cutting-down VMware usage all-at-once yields significant savings instantly

- Reinvestment of some/all of the savings can build a more modern, more efficient infrastructure

- Thinking ”outside the box” can yield even more long-term benefits

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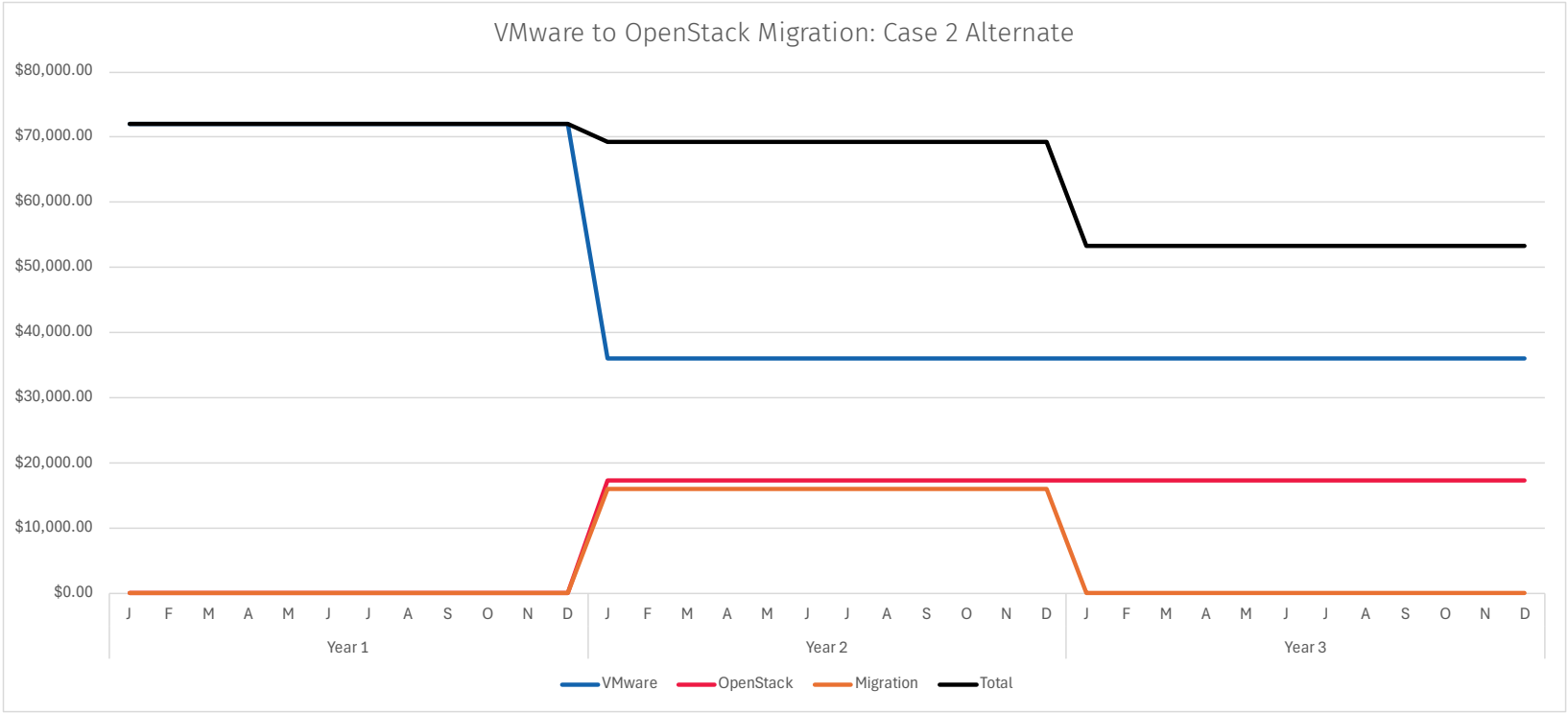
Another alternate approach to Case Study 2

What if the customer can't migrate 100% to OpenStack?

Will they still save anything?



Notes:

- Total yearly costs:
  - Year 1: $864,000.00
  - Year 2: $825,400.00
  - Year 3: $639,300.00 ← *Still a 26% Reduction in Operating Cost*
- Now represents a transition from 100% VMware → 50% OpenStack/50% VMware in Year 2
- Assumes 100% draw-down of migrated VMware servers and 100% build-out of OpenStack servers on Year 2 Day 1

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Savings still possible with partial migrations…

- By reducing VMware consumption by 50%, total operating costs can be reduced by 26%
- Even bearing the full migration costs in Year 2 yields 6% savings
- What if fewer VMs needed to be migrated and could just be re-deployed?
  - Lower migration costs
  - Quicker migration timeline
  - Faster route to savings

Partial Migrations

- Even partial migrations can yield measurable savings
- Identifying the best workloads to run on OpenStack can assist in saving
- Find alternative ways to migrate workloads vs. just VM “lift-and-shift” – this is not only quicker, but more cost-effective

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Wrap-Up

The economic results speak for itself…

Open-source is cheaper in many ways:

- Open-source software is not only less expensive to operate, but migration from proprietary platforms can yield significant savings
- The reduction in operating costs is significant enough to absorb migration costs and still have savings during the transition

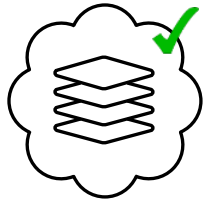
There are many avenues to savings:

- Whether a full migration or partial migration, there are routes to savings
- VM migrations can be expensive, but are neither as expensive as some have indicated nor always necessary
- Repurposing recovered IT budget can be used to accelerate both the migration process as well as additional IT modernization plans

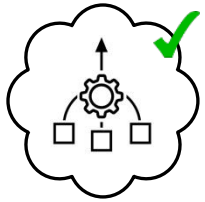
What can you do with the savings?

Infrastructure Re-Investment

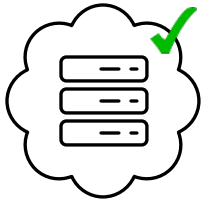
- Update and modernize your application (e.g. Kubernetes)
- Refactor and/or consolidate workloads
- Upgrade hardware and modernize your infrastructure



Application modernization



Workload consolidation or refactoring



Hardware or infrastructure upgrades

Many customers have optimized their hardware infrastructure for VMware licensing – what if you no longer have to?

Q & A

Thank You!

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OpenStack and Kubernetes

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