



OpenData

# Building a Business Case for OpenData

**Building a solid business case for justifying the purchase of OpenData for your data center is only 10 steps away**

## INTRODUCTION

Building a solid business case for justifying the purchase of Modius' OpenData Solution doesn't need to be a daunting task. There are numerous areas of the data center that can be improved by implementing OpenData and each area can deliver a measurable cost savings to justify the initial purchase and implementation.

This document is designed to provide a framework for building this business case. It describes some of the key data center issues that OpenData is designed to address and provides some guidance for generating a cost savings based on implementing the Modius OpenData solution. Each business case will be slightly different depending on the size of your data center, the location and other variables used in the calculations. This document will also include the "soft" cost savings associated with productivity gains and process improvements that generally not included in a Return on Investment (ROI) analysis. Finally, we have provided a fictitious business case template that you can use for building a business case for your specific situation.

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## STEP 1: DEFINE THE PROBLEM & GOALS

Having a clear understanding of the problems you are trying to solve in your data center and the specific, measurable goals for improving the situation is a critical first step in building a business case. Begin by ensuring you have outlined the current situation, including the key problems or “pain points” the data center is experiencing, along with the overall need for the project. This may require some additional fact finding to benchmark the current situation, so Specific, Measurable, Achievable, Realistic and Timely (SMART) goals for success can be established.

For example, my “pain” might be that it is taking too long to deploy new equipment in my data center and it is negatively impacting the business (delaying the roll-out of new revenue-generating applications). A SMART goal for relieving this “pain” might be “reducing the average time required to deploy new equipment from 6 days to 3 days, within 1 month of deploying OpenData”.

## STEP 2: GATHER THE REQUIREMENTS

OpenData is a catalyst for process improvement in the data center. To fully understand the benefits of implementing OpenData, it is very important to understand the current data center management process; the existing processes, the existing tools, how decisions are made, the organization’s culture, etc. With a firm grasp of your existing situation, you can build a case for how things should work, gathering the requirements and the business objectives they support. Focus on identifying the business requirements that yield a positive ROI. Your summary should include how having access to the performance measures available in OpenData will influence process changes in the data center that are currently not meeting expectations.

Using the “pain” example above, you can detail the current process for how equipment is deployed today (manually searching for the appropriate space) and detail how by implementing OpenData this process can be improved (using rack visualization features to instantly find the best place to add this equipment).

## STEP 3: BUILD THE BLUEPRINT

In addition to gathering the project requirements, the overall project blueprint needs to be defined. This up-front effort is essential to accurately defining and estimating the project’s total cost of ownership. If this step is skipped, the outcome will be a vague project definition and a ballpark estimate that often leads to non-approval or missed expectations.



Some of the items in the blueprint include the following:

- Project Definition (Objectives, Mission & Vision, Goals & Success Criteria, Scope, Stakeholders)
- Technical Requirements
- Infrastructure (Licenses, Test, Production, and Training Environments)
- Professional Services (Installation, Implementation, Integration)
- Production Deliverables (Reports, Workflows)
- Project Plan (People, Timelines)

## STEP 4: IDENTIFY THE BENEFITS

In this step you need to identify the tangible and intangible benefits you expect to receive by implementing OpenData in your data center. The link between the benefit and how much OpenData will contribute to each benefit may be, in many cases, subjective. In certain situations, past empirical evidence may support the link between OpenData and the benefit, but some cases are clearer than others. Benefits fall into three major categories; tangible, strategic and intangible. Although it's important to note all three in the business case, only the tangible benefits can be reasonably measured to calculate a defensible ROI.

Data center managers and executives who set out to calculate the all the benefits for implementing OpenData can start with the low-hanging fruit by using a straight forward justification based on the technology itself. Examples include some of the key OpenData functions like automated asset discovery that eliminates the need for periodic physical audits and built-in business intelligence reporting that instantly produces and delivers management reports.

Following the technology justification, the current practices should be examined to determine the ROI that will result from process improvement coupled with better decisions that can be made through the information provided by the Modius OpenData solution. We have some general assumptions in this area, but it is best to determine how the users of OpenData will employ this new information in their day-to-day activities to make better decisions and positively impact the bottom-line. This may involve interviewing all stakeholders, including executives, middle managers, analysts, IT personnel and facilities.

Arriving at a consensus on the benefits across all affected stakeholders is the most difficult challenge for developing an ROI for OpenData. This is usually related to the potential accountabilities associated with a quantitative measurement of performance. This can be mitigated by being ultra conservative regarding the setting of performance targets for reductions in operating costs or additional revenue generation. For example, if there is a strong probability of reducing our new equipment deployment time by 75% based on implementing OpenData, set a performance target of 50%.

Some examples of the tangible generic benefits of implementing OpenData in your data center are provided in the following table.

BENEFITS OF IMPLEMENTING OPENDATA			
DESCRIPTION	REVENUE GENERATION	COST SAVINGS	CALCULATION
DataCenter Audits	-	YES	Number of Audits per year x Number of People x Hours to Complete x IT Burdened Rate x 90% faster with Modius Open-Data Discovery
Extending Useful Data Center Life by retiring Orphaned Servers (Space)	-	YES	DataCenter Years Remaining x 12 months x Orphan % (9%) x (Cost of Building a New DataCenter / (Years of Useful Life x 12 Months))
Orphaned Servers (Power)	-	YES	Total Servers x Orphan % (9% avg.) x \$262 per Server (U.S. avg. Power Cost) = Annual Power Cost of Orphan Servers
Server Purchase Deferral (Re-deploying Orphan Servers)	-	YES	Total Servers x Orphan % (9% avg.) x % Re-deployed x Server Purchase Price
Finding Failed Servers	-	YES	(No. of Critical Server Failures (per year) x time to find x business cost hour) + (No. of Critical Server Failures (per year) x time to find x IT Burdened Rate) x 90% Quicker with OpenData
Management Reports	-	YES	Number of Recurring Reports per Month x 12 x Preparation Hours x IT Burdened Rate
PUE Reduction	-	YES	(Current Annual Data Center Utility x 1-1/(Current PUE Rating)) - (Current Annual Data Center Utility x 1-1 / (Reduced PUE Rating))
Deploying New Applications	YES	YES	(Hours to Deploy New Application x Number of People x IT Burdened Rate) x 50% Quicker with Open-Data (Hours to Deploy New Application x Revenue per Hour Generated from the New Application) x 50% Quicker with OpenData

## BENEFITS OF IMPLEMENTING OPENDATA, CONTINUED

DESCRIPTION	REVENUE GENERATION	COST SAVINGS	CALCULATION
No mistakes on Server Moves	-	YES	Number of Servers moved per year x % moved incorrectly x hours to install, remove, re-install x IT Burdened Rate x 90% Mistake Reduction with OpenData
Eliminating Downtime from Human Error	-	YES	(Incidents of Downtime from Human Error (per year) x time to correct x business cost hour) + Incidents of Downtime from Human Error (per year) x time to find x IT Burdened Rate) x 90% Quicker with OpenData

Let's look at some of the common data center problems that OpenData can resolve by applying Data Center Infrastructure Management (DCIM) principles.

### UTILIZATION

One of the biggest opportunities for generating tangible savings in the data center is improving the overall utilization of the equipment under management. The most popular of current strategies for achieving better utilization is virtualization, running multiple virtual servers on a physical device to insure the physical device is running near capacity. The promise of virtualization is very attractive and many companies have taken the leap of faith, but have not realized the savings originally promised. In many cases, no baselines were established before the virtualization project started, making it impossible to measure against the goal.

Our OpenData solution isn't a virtualization product, so you can't apply a direct, quantifiable financial return as you would with the purchase of VMWare. The return on investment for using OpenData in a virtualization project is derived from improved decision making and productivity as a result of having better information sooner, as well as the new and modified processes enabled by implementing OpenData in your data center.

Some of the improved decisions derived by using OpenData to manage and execute a successful virtualization project include:

- Discover the location of your virtual servers on your physical servers
- The ability to baseline the current power consumption of the data center before starting the virtualization project begins (PUE, DCiE)
- Visualize your current virtual environment (If any). The ability to determine which servers and cabinets are already at peak utilization
- Model the impact of the entire virtualization project before you start, making better decisions and avoiding costly mistakes

- Control the entire process in an orderly and systemic manner to avoid costly delays and crippling mistakes.
- Report on the progress at anytime during the project to measure against the baselines
- Accurately predict the impact of future virtualization projects on data center capacity.

## **AGILITY**

A major sweet spot for OpenData is the ability to improve the productivity and effectiveness of the entire data center staff. Whether you are rolling out new equipment, or trying to track down all the physical hardware that has been affected by a catastrophic failure, getting things done faster and done correctly the first time can have a very beneficial impact to data center costs and potential revenue generation.

Our OpenData solution is all about productivity improvements and making the right decisions to effectively and efficiently manage the day to day tasks in your data center. In a recent survey of 300+ data center managers, on how long it took to deploy a server in their data center, over half, (58%) reported that this activity took between 1 week and 2 months to complete. The cascading effect of change can cause catastrophic problems for data center's that don't have the proper procedures and tools to guide them quickly and efficiently through the process of implementing new services and optimizing the ones they already support. Making changes is one thing, making the right changes, in the quickest and most efficient manner requires Data Center Infrastructure Management. On average, OpenData should improve the time required to make changes in the data center by 50%.

Some of the improved decisions derived by using OpenData to manage and execute changes in the data center include:

- Automatically discover data center assets for instant audits
- Visualize the capacity of your current environment to instantly identify areas that can support the planned changes
- Model the impact of data center changes before you start, making better decisions and avoiding costly mistakes
- Automated selection of the best place in the data center to place equipment
- Control the entire process in an orderly and systemic manner to avoid costly delays and crippling mistakes.
- Report on the progress at any time during the project to measure against the baselines
- Accurately predict the impact of future projects on data center capacity based on historical trends and planned events.

## **POWER & COOLING**

The management of power and cooling capacity in the data center is more critical than ever as power use in the data center has doubled in the last 5 years, and the cost of power and cooling a server far exceeds the cost of the hardware over its useful life. As the processing power of servers continues to rise and with it, the density and heat produced by the processors, the power requirements to run and cool this equipment can exceed the utility's ability to deliver power to the facility.

With OpenData's ability to provide intelligent capacity planning for data center power and cooling, significant savings can be achieved by accurately optimizing the power and cooling capacity for the existing equipment. Small changes to a data center's PUE can yield huge reductions in the cost of powering and cooling of the assets on the data center floor. Using OpenData to balance the power and cooling capacity provides the ability to raise the data center floor temperature, generating huge savings, without the risk of damaging the equipment. Systematic improvements to the management of your data center's power and cooling capacity using OpenData should cut your power bill by 10%.

Some of the improved decisions derived by using OpenData to manage the power and cooling in the data center include:

- Discover all the network connected assets to accurately calculate their power & cooling requirements
- Visualize the power and cooling capacity of your current environment to instantly identify areas that have exceeded thresholds
- Model the impact of data center changes to balance power and cooling capacity before you start, making better decisions and avoiding costly mistakes
- Automated selection of the best place in the data center to place equipment to eliminate hotspots
- Control the entire process in an orderly and systemic manner to avoid costly delays and crippling mistakes.
- Report on the progress at anytime during the project to measure against the baselines and make adjustments as needed
- Accurately predict the impact of future projects on data center's power and cooling capacity based on historical trends and planned events.

## **SPACE**

Expanding data center facilities is an expensive proposition and building a new data center is nearly cost prohibitive. Optimizing the available space in your current facility and extending its useful life can delay or eliminate the expense of providing space for new equipment. Recovering space in existing data centers without using OpenData requires plenty of time and energy. Without the ability to instantly assess the cascading effect of data center changes, one might end up doing more harm than good.

With OpenData's ability to provide superior capacity management for data center space, significant savings can be achieved by extending the useful life of the existing facility and deferring costly expansions and new data center builds. Using OpenData to recover the space occupied by old or orphaned servers can produce tangible cost savings in the recovered power and cooling capacity as well as deferring or eliminating the expense of a costly facility build-out. Using OpenData to defrag your data center should recover 10% additional space for extending its useful life.

- Discover the location of older or orphaned equipment in your data center
- Visualize the available space left in your current environment



- Model the impact of removing orphaned equipment before you start, making better decisions and avoiding costly mistakes
- Control the entire process in an orderly and systemic manner to avoid costly delays and crippling mistakes.
- Report on the progress at anytime during the project to measure against the baselines and make adjustments as needed
- Accurately predict the impact of future projects on data center space capacity based on historical trends and planned events.

## STEP 5: ESTABLISH A BASELINE

In this step you need to baseline the existing functions that you expect to improve by implementing OpenData. A baseline serves as a comparison point so you can accurately measure the ROI by comparing the current way your organization operates and the improvements you expect based on using OpenData. The baseline should include data on such criteria as time, human resources, cost, performance, results, etc. For example, to accurately calculate the expected ROI for improving the cycle time for deploying a new customer-centric application, you need to know time it takes now, the people involved and any other cost savings or revenue generation that can be attributed to deploying the application faster than before.

## STEP 6: CALCULATE THE TOTAL COST OF OWNERSHIP (TCO)

When evaluating data center management solutions, some companies fall into the trap of only comparing license fees and not really considering the TOC for implementing a solution. You need to use the total cost of ownership in the ROI calculation, including hardware platform, software, maintenance, consulting services, internal resource costs (burdened), and other costs including training, implementation, data manipulation, integrations, etc.

## STEP 7: CALCULATE THE RETURN ON INVESTMENT (ROI)

In this step you need to pull it all together and calculate a believable and defensible ROI for the project. The standard annual ROI calculation divides all the annual benefits by the total annual costs to determine the annual return on investment percentage.

ROI	ANNUAL ROI FORMULA	ROI PERCENTAGE
<b>ROI =</b>	<b>SAVINGS / (INITIAL INVESTMENT + MAINTENANCE)</b>	<b>x 100</b>

The project's overall ROI uses the Net Present Value (NPV) of the savings generated by implementing OpenData divided by the initial investment and the maintenance cost. The NPV gauges tomorrow's return in today's dollars.

For example, assuming that after all the benefits of implementing OpenData have been considered, we calculate an annual savings of \$100,000 the first year, with a TCO of \$150,000 and annual maintenance of \$18,000. Of the \$100,000 savings, \$60,000 was gained by initially removing orphaned servers, so \$40,000 is the ongoing annual savings years 2 - 5. The required rate of return is 10%. The present value can be calculated as follows:

NET PRESENT VALUE CALCULATION		
YEAR	CASH FLOW FORMULA	PRESENT VALUE
T = 0	$(\$100,000 - \$150,000) / (1 + .10)^0$	-\$50,000
T = 1	$(\$40,000 - \$18,000) / (1 + .10)^1$	\$20,000
T = 2	$(\$40,000 - \$18,000) / (1 + .10)^2$	\$18,181
T = 3	$(\$40,000 - \$18,000) / (1 + .10)^3$	\$16,529
T = 4	$(\$40,000 - \$18,000) / (1 + .10)^4$	\$15,026
	<b>NET PRESENT VALUE</b>	<b>\$19,726</b>

Based on a positive NPV in year #4, it would be a better decision to invest in OpenData, than to continue on the present path. Of course, your numbers will vary.

## STEP 8: DETERMINE THE PAYBACK PERIOD

In our example in the previous step, you can identify the point in time when the savings surpass the total costs of implementing OpenData. The payback period calculation determines the number of years that are required for the discounted projected cash flows to equal the initial investment and the on-going maintenance cost.

The payback period in our example above was in year number 4.

## STEP 9: MEASURE THE INVESTMENT & BENEFITS

Assuming the project was approved after your analysis, you need to collect the actual investment costs and benefits during the projected payback period to determine if the actual calculations were accurate. We recommend that each year, you should prepare a report for management to summarize how the actual ROI calculations compare to your original ROI assumptions. This will provide management with a ROI scorecard for measuring how well the organization is doing relative to its ROI goals. This scorecard will also provide credibility for getting new projects approved in your data center.

# STEP 10: SELL THE VALUE

After the decision to implement OpenData in your data center has been made, the task of selling the benefits internally begins. If management does not effectively integrate OpenData into the fabric of the data center, the benefits and savings are difficult to achieve. OpenData is designed to help companies make better decisions for the management of their data centers, but if it isn't fully engrained as part of the management process, the full potential is never realized.

## CONCLUSION

Calculating a defensible ROI is part art and part science. The art involves working with all facets of data center operations to determine the quantitative and qualitative benefits of the Modius OpenData solution and obtaining buy-in for the tangible benefits. Given that OpenData relates directly to performance measurement, it stands to reason that using a quantifiable ROI strategy for justifying OpenData offers management with a concrete measurement of the project's success and the mechanism for managing and retaining on-going benefits throughout the data center's useful life. Without an ROI scorecard, it is difficult to know if you've made the right decision – which is what OpenData is all about.

## ABOUT MODIUS

Modius is an independent software vendor based in San Francisco, California. Founded in 2004, Modius develops intelligent measurement systems for mission critical facilities that improve business continuity, energy performance, and carbon management. Modius solves the challenge of integrating both IT and facilities management information into a single, comprehensive measurement system. Modius empowers 'smart' data center management through:

- 1:** Widespread, practical, low-cost collection of all physical-layer performance data
- 2:** Trustworthy and reliable analysis tools based on comprehensive data and rich analytic capabilities
- 3:** Useful and actionable intelligence through highly-configurable business logic
- 4:** Customized workflows, **delivering the right intelligence to the right people at the right time.**

### TECHNICAL SPECIFICATIONS

Modius OpenData is a software application that can be installed on-premise or hosted in the cloud. Some customers choose to run the application within VMWare ESX. Software platform requirements are as follows:

- **Windows Server** - 2008, 2008 R2, 2012
- **Database** - Express, Workgroup (Up to 2012) and MS SQL Server 2008 - 2016

**CONTACT YOUR MODIUS REPRESENTATIVE FOR MORE INFORMATION ABOUT HOW OPENDATA CAN FREE UP TRAPPED CAPACITY IN YOUR DATA CENTER, SIGNIFICANTLY REDUCING OPERATING COSTS.**



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