

Developing a cloud sourcing strategy

Two steps to calculate
the total cost of ownership
of your cloud



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EXECUTIVE SUMMARY

Usually, the value that cloud services can bring greatly outweigh monthly cloud and hosting fees; the key is to determine which use cases offer the right fit. Jumping into a project without a realistic expectation about one's total cost of ownership (TCO) will most certainly lead to more failures than successes.

A cloud services evaluation should take into consideration your industry and how a scalable, OPEX driven compute model can help drive additional business value. Defining the metrics of this analysis goes beyond financial cost; consideration of cloud models, staffing, migration, compliance and security will all determine if cloud services are a strategic match.

This white paper examines the key steps to take when considering the costs and returns of a move to the cloud.

CALCULATING TOTAL COST OF OWNERSHIP FOR CLOUD SERVICES

“Cloud services can reduce TCO by as much as 60% when compared to on-premise hosting.”

Nearly every enterprise large or small feels the need to explore the value of cloud services; most see the promise of capital cost reduction as a major lure. When done right, substantial cost savings are indeed achievable through cloud migrations.

In fact, cloud services can reduce TCO by as much as 60% when compared to on-premise hosting. But improper implementation of a cloud project might only yield a reduction of 10%. The key to identifying the potential cost savings lies in understanding the true underlying benefit of cloud: enabling business velocity.

All successful cloud projects have well-articulated total cost of ownership metrics relating to business velocity, and any meaningful calculation must focus on what's important to your organization. The steps to an effective TCO analysis consists of a two-step approach:

1. Define the components of your current solution's TCO
2. Making a cost comparison

Let's take a closer look at each.

DEFINE AND MEASURE TCO ELEMENTS

It's impossible to measure TCO until you define it. Therefore, the first step is to define different the costs, both general and unique to your business or industry. Typical cost elements are:

- **Value of enabling business velocity** - Arguably the most important element of determining total cost of ownership. Business velocity, in simplest terms, is the ability to quickly meet the shifting needs of the business. Practical examples of enabling business velocity through cloud services include accelerating time to market, responsiveness to marketing campaigns and the ability to integrate mergers and acquisitions. Enterprises must put a value on business velocity.

Measuring business velocity focuses on three core elements:

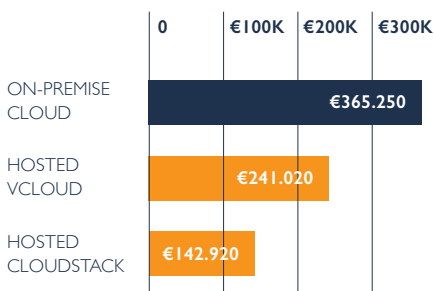
- 1. Revenue growth** - identifying and capturing revenue streams, improving customer engagement and rapidly leveraging new market conditions to support growth.
 - 2. Cost reduction** - continuously capturing opportunities to improve operations, reducing cost relative to revenue and improving project time cycles.
 - 3. Brand reputation/risk** - adapting to threats or business restraints and mitigating business-impacting events.
- **Lost opportunity costs** - The flip side of enabling business velocity is the cost of doing nothing. Lost opportunity cost refers to the benefits you could have received by taking an alternative action. Cloud services have the potential to speed time to market, which can translate to increased revenue. Enterprises that choose to keep revenue generating applications in-house risk the potential of not effectively reacting to market opportunities, as scaling infrastructure internally is both time consuming and expensive.
 - **Sunk costs** - This is the single largest bucket to analyze. Most previous investments in data centers, hardware, software, tools and licenses will have to be written off, especially in a public cloud model. For example, private clouds - when hosted on customer premise infrastructure - allow for the reuse of certain infrastructure components. Plan on finding other uses for stranded investments in the areas of development and testing as well as business continuity environments.
 - **Staffing and skillsets** - Most cloud projects require a different set of skills (APIs, open source platforms, etc.) to implement and manage workloads. Traditional skillsets in server, network and desktop administration are not needed in a cloud environment as they are embedded in the service. In most instances, reskilling employees in more 'DevOps' centric areas are wise as it allows them to better manage cloud environments. Cloud/DevOps engineers are in high demand and command large salaries.
 - **Migration/ implementation costs** - Unless one is deploying a greenfield project, there will be migration costs including automation, customization and documentation. Project planning is required to understand where current dependencies exist between on premise and cloud applications. Considerations include: redeveloping or reconfiguring applications, increasing security and compliance support, back-end integration as well as documenting and testing. When migrating critical production applications, consider running dual application instances to ensure continuous application availability.
 - **On-going provider costs** - As with any outsourced service, the financial model shifts from capital to operational expenditure. For many, this is a positive change but it comes with a less predictable billing model. With public cloud, it's easy to provision additional resources to meet a peak or temporary need. But what most forget is to turn off resources when they are no longer needed. Keeping the meter running can easily destroy positive return on investment. Bare metal solutions as well as fixed-fee services help alleviate the unpredictable cost component for hosting, but don't allow for similar rapid scalability. Understanding your required capacity to run your workloads will help determine which model is best suited to meet your hosting needs.
 - **Security and compliance** - Despite the improvements in cloud based security and compliance, moving any workload to a third party platform introduces risk. For those in regulated industries such as financial services, healthcare and government, moving workloads to cloud platforms incurs additional costs including encryption, malware or intrusion detection and file integrity monitoring. Additional security and compliance audits may need to be performed to ensure your cloud provider meets your required industry standard.

Total 3-year cost on-premise cloud solution

Item	Price	Units	Total (€)
Server room rent cost (4 m2)	10.800	1	10.800
Server room AC + maintenance	5.000	2	10.000
Fire suppression system	5.000	1	5.000
Room security systems	4.500	1	4.500
Physical Servers (8 CPUs, 6 cores)	7.000	4	28.000
Hypervisor licenses (VMWare, enterprise, 24/7 support)	21.600	1	21.600
SAN infrastructure (15 TB)	50.000	1	50.000
Network infrastructure (10GE switches)	4.800	2	9.600
Racks/cabinets/PDUs (46U cabinet, inc. power and cooling)	6.750	1	6.750
UPS and generator	18.000	1	18.000
Connectivity (Verizon 100/100 fibre) + 5x IP	3.000	1	3.000
ISO compliancy audits	18.000	1	18.000
FTEs (1)	180.000	1	180.000
Total cost			365.250

Total 3-year cost private cloud solution hosted in tier 3 LeaseWeb data center

Middleware brand	vCloud	CloudStack
Base price	54.000	17.100
50 cores	75.600	21.600
200 GB RAM	Included	Included
SSD storage (2TB)	11.520	4.320
Bandwidth (100Mbps, 95th percentile)	9.900	9.900
FTEs (0,5)	90.000	90.000
Total cost	241.020	142.920

3 YEAR COSTS: ON-PREMISE CLOUD SOLUTION VS LEASEWEB HOSTING**PUTTING IT ALL TOGETHER**

By now you should have a clear indication of:

- In-house costs: acquisition, on-going operational and management costs
- Cloud provider costs: one-time set up fees and monthly cloud fees
- Any cost savings for shorter deployment cycles
- Apply preferred pay-back period (3–5 years)

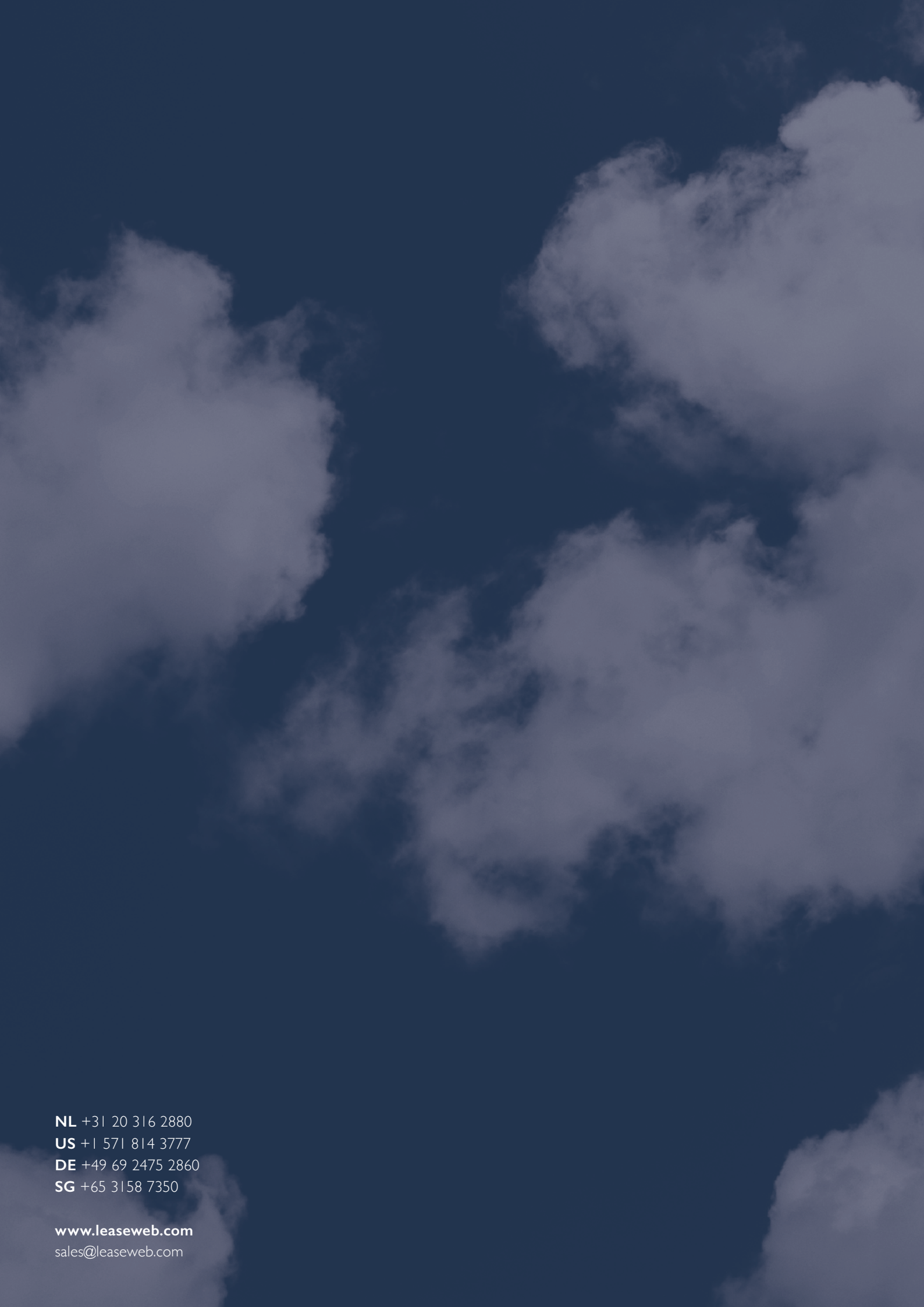
To illustrate a typical TCO scenario, we compare both on-premise and third party hosting and operational costs for a small four server development environment over 3-year period (see tables above).

In this case, when comparing on-premise versus third party hosting, it's important to understand any embedded or hidden costs that could skew results in either direction. Two of the most distinct differences lie in both staffing and hardware costs.

- **On-premise** - Enterprises that decide to host internally will need to make one-time capital investments in equipment and licenses and then choose how to amortize the total cost of those elements. On-premise hosting expenditures will generally have higher costs in year one but the lower cost in subsequent years.
- **Third party hosting** - Those that contract with a cloud provider will encounter two distinct differences from on-premise hosting; one-time capital expenditures will be substantially lower and monthly hosting costs will generally be more predictable and steady over the life of the contract. The exception to this rule occurs when using dynamic IaaS based compute and storage for spiky and unpredictable workloads.

The above analysis shows that engaging a service provider can be truly transformational for an enterprise, with a TCO reduction between 34-60%. This example also does not take into account the fact that hosting in a professional, certified third party data center will most likely result in a much more reliable uptime, due to 24/7 support, spare parts on-site, and continuous infrastructure improvements.

Balance needs for cost savings with increased business velocity and be prepared to work with your provider to build a cloud architecture that supports both day-to-day and unplanned compute requirements. Of course, the analysis is only a current-state activity. Therefore, revisit your cloud strategy annually and prepare to take advantage of future trends such as community and hybrid clouds to stoke your pace of innovation!



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