ADVISORY

WHITEPAPER

Cloud adoption challenges

Cloud service provider selection Challenges & considerations

new perspectives

BDO

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Introduction

Technology is rapidly changing businesses in an ever-increasing pace. At BDO technology, we clearly distinguish two sides to this technology 'coin'. On the one hand, it acts as a disruptor to existing business models while on the other hand it creates unimaginable new opportunities. New companies and new service models have risen rapidly while existing models and companies have faded. Public Cloud[1], in its various deployment models, is one of the most significant disrupting technologies of the past decade that cause and influence this change.

In this whitepaper, we have taken a closer look at a specific cloud adoption challenges that many companies encounter. It focusses on the issues involved with the initial selection of an appropriate Cloud Service Provider or Cloud Partner (CSP) and determining the appropriate and relevant selection criteria[2].

One issue that stands out appears to come forth from inflated expectations and misunderstandings about Public Cloud. Oftentimes, organisations issuing an RFx[3], have decided that 'it must be cloud' without a proper business case behind that decision. As a result, expectations are an unrealistic improvement of:

- *time to market* of functionality;
- better *functionality*;
- lower *costs*.

This stems from various misconceptions. For one, the stake-holders behind an RFx might have very different perspectives of what 'the Cloud' entails. Whereas the CFO could think in terms of a Sales Force-like solution, the CTO could think 'Instances/Virtual Machines' instead of his current data centre environment.

A more impactful issue seems to be that many issuers of an RFx seem to lack both a solid Cloud Strategy and an understanding of the fundamental differences between the Public Cloud and their current ICT environments (in terms of knowledge required, possible technological outcomes, and *practical operation/processes*). Without these key elements, the RFx is unlikely to be successful or at the very least will require a major overhaul once the 'gap' has been closed. Given the research question, this whitepaper has taken a more generic business focussed approach rather than a technical analysis of Cloud Adoption issues. Technically oriented questions will depend on factors like the ones mentioned below which can mutually influence each other. A solid view on these is the correct starting point to enter into a technical discussion with a potential CSP.

Business goals

- Which are the goals of the internal/external customer, and by extension?
- Which are the customer-related goals of the delivering entity?
- Any additional goals of the delivering entity, not directly related to this project?

Application

- What is the overall genre of the application, e.g. Big Data, Financial, …?
- Which (additional) technologies are required by your organisation/application partner[4]?
- Is the application layer Cloud-ready in part or in full:
  - can you match it to the 12-Factor principles[5]?
  - how does the project affect the entire application landscape, i.e. will its influence consist of:
    - remove the application;
    - retain it;
    - replatform;
    - rehost;
    - repurchase;
    - refactor[6].

Cloud platform-specific

- If you have sufficient technological insight into the available Public Cloud propositions, which Cloud platform seems best suited for your needs[7]?
- Which technologies, specific to that platform, are minimally required (if any)?

Organisation

- What type of cooperation are you looking for in a CSP:
  - Consultancy to make your organisation self-sufficient in its Cloud management, and/or
  - Managed Cloud Services, similar to traditional Managed Hosting in that your organisation simply enjoys the benefits of a service without most of the risks/overhead costs, and/or Hands-on assistance of your organisation's technological teams by (certified) partner representatives?
- Have you mapped your existing internal capabilities against the envisioned future mode of operation?

This whitepaper focusses on Cloud Service Provider selection challenges and considerations that we have encountered during our research and discussions with various parties. It is not meant to be exhaustive, as there are always other & new challenges that can occur in more specific RFx tracks or other technologies and or businesses. However, we believe it provides a strong foundation for the RFx issuer to take note of, provides guidance, and significantly increases a successful Partner cooperation and outcome in the cloud adoption process.

1 NIST definition SP 800-145
2 Many of the concepts of the annexes, such as the Cloud Adoption Framework as originally coined by Amazon AWS, equally apply to other leading Cloud propositions – in specific, to those of Google and Microsoft.
3 Request For Information or Proposal (Tender process elements)
4 Throughout this current document, the word 'Partner' with a capital P refers to the service organisation that is a partner of the Cloud provider. Otherwise, 'partner' refers to any party that has a deep business relationship with the RCx-issuing organisation.
5 https://12factor.net/
6 These 'six Rs' are a concept from AWS'. Throughout this document many AWS-originating concepts are used given their market position, only if these also apply to the other leading CSPs.
7 Each of the popular Cloud platforms has 'abstracted services' that can be used in the stead of 'just a bunch of virtual machines'. For example: you can build your own MongoDB database for a Big Data application, but that will use up substantial resources of 'virtual server management'. The provider-delivered abstracted services deliver the same functionality (and often more), yet cost very little effort to maintain, scale up/down, and manage in general.

1 Motivation

Market situation

Although 'The' Public Cloud calls loudly, and adoption is rapidly increasing, many organisations still wrestle with the actual, full-scale adoption. They might run some new applications on Azure, have a few projects that run on AWS, but these are typically isolated (Shadow IT or 'test balloon projects', effectively managed in a mini-Bimodal environment). Throughout the Cloud services market still a *profound lack of real Cloud Strategies* behind Cloud initiatives, even as early as at the RFI stage, is experienced.

1.1 Challenge

Unfortunately, such organisations are *unknowingly ignorant* of what to ask for. Instead of inquiring into how their application developers will cooperate with the 'virtual infrastructure developers', they create a 'monster assignment' consisting of 4 lots, including a 'data centre migration lot' and a 'DevOps lot', that hardly any single provider can deliver upon. Ending up with 4 individual finalists, the project becomes humanly *unmanageable* and the RFx ends - then and there.

Alternatively, they issue an Excel sheet that asks for the fees per GB storage, price of a Virtual Machine/Instance, and band-width rates. Although pricing indeed should be a topic of an RFP, the *most important questions* are entirely missing…

As a consequence, we see most RFxs being withdrawn prematurely or simply fail in the end – this entirely due to the *triple discrepancy* between what the organisation *is asking for*, what the selected bidder(s) *can actually deliver* individually or in a 'multi-lot constellation', and what the organisation *should have actually* asked for in the first place.

1.2 Solution

A solution to the challenge could be two-fold:

1. a straight-forward approach is the one as presented here; the suggested questions and corresponding rationales will give most organisations a solid starting point to select a truly capable CSP. This will dramatically raise the chances of the RFx succeeding, since the organisation will have weeded out any unsuitable bidders at the earliest (RFI) stage. Although the organisation itself still may have little real understanding of the Cloud-related concepts, the remaining bidders are knowledgeable (and should be able to guide the organisation through the rest of the Adoption process);
2. out of scope for this document, but certainly relevant to the above-mentioned challenge, is the embedding of a solid Cloud (Adoption) Strategy in the organisation itself. This can be the result of the assistance of the selected bidder, provided that the RFx-issuing organisation expressly looks for that capacity among the respondents. A best-case scenario would be, to leverage the expertise of an experienced but pragmatic partner such as BDO even before putting the pen to the paper and having a Strategy in place first to guide organisations onto the right path.

2 Process suggestions

2.1 A 'weighing system'

Prior to issuing the RFP, an organisation can consider assigning a 'weight' or maximal score to each question. The organisation can then assign a score to each bidder's response to the questions, resulting in a rough 'general score' per bidder. This way, organisations can quite quickly determine which respondents it should allow to continue to the next RFP phase, and which to deny further bidding (e.g. a meagre score of 30 out of 100 would obviously disqualify a respondent).
Please note:

- weighing factors are specific since these will relate to your[8] organisation's business/technological factors and have therefore not been provided;
- however, advice/suggestions are included in the form of added questions;
- we would advise your organisation not to include its scoring system with its initial RFP. The scoring system would give away information to bidders about your organisation's stance in certain matters, including to bidders that you'd later disqualify. We suggest sharing the scores and scoring system only when announcing the finalist(s).

2.2 Mandatory criteria

Per question, your organisation may consider to decide that an insufficient score is a 'knock-out' criterion. This will substantially speed up your primary selection process by 'weeding out' all parties that do not meet a mandatory criterion. We feel that sharing this criterion with bidders is also best postponed to a later stage of the RFP process.

2.3 Limitations to the responses

A common theme in RFx processes is the limitation of the response length, which can make sense, as this will force the respondents to provide condense and well thought-out responses (and reduces the workload of those that must evaluate to responses).

We would however suggest not limiting the number, or size, of annexes but urge the respondent to be specific and to the point. Woolly responses can be an indicator of the respondent's lack of concrete skills or capability around the concerned topic. *Less is more in this context!*
Reasons: your organisation will want to gauge *the level of maturity* of the respondents' organisations. If a respondent can provide a *good answer to the question with a standard annex* (without too much 'overhead information'), this is a very good indication that the process/technology in question is well grounded in that organisation. Insist on as less overhead information as possible.

Good example:
Q: "Describe your CI/CD approach."
A: "See Annex, CD/CD in practice.PDF" (6 pages)

Bad example:
Q: "Describe your CI/CD approach."
A: "See Annex, Overview of all Operational activities.PDF" (92 pages)

8 From here on forward, the wording is geared towards the organisation that intends to issue an RFx. For example, 'you' and 'your organisation' address the reader/issuer.

2.4 About CI/CD

2.4.1 Relevance to your RFx

A very straight-forward way of migrating an existing application/implementing a new one in the Cloud, is to simply recreate the physical configuration the Virtual Machines (a.k.a. Instances) in the Public Cloud. With some minor differences, you can then manage the environment as you would manage a traditional, physical one. The true power of the Public Cloud however is best unleashed when engaging in Continuous Integration or Delivery ('CI/CD'), combined with the cultural changes that come with DevOps. The latter in specific should be a core capacity of a true CSP, including the capability of teaching your organisation DevOps 'as you go' – instead of insisting that you change completely to DevOps overnight.

2.4.2 CI/CD in a nutshell

Continuous Integration

CI is a code (software) engineering practice, focused on the Build & Test phases. It applies to software engineering, and also to infrastructure as code (the code that builds Cloud infrastructures). The aspect of 'continuity' is found in:

- the frequent issuing;
- of small changes;
- that are immediately tested;
- and then Integrated into a repository (hence in Version Control);
- with each 'check-in' then verified by an automated build - allowing teams to detect problems very early.

If the new code passes the tests, it is *integrated* into the target code base of the software product, or of the '*infrastructure as code*' product, ready for Delivery (it is then considered 'Committed'). Otherwise, the developer receives an alert that the tests were not passed so he/she can take corrective actions. *The observant (technical) reader will recognise how nearly all steps of the above process can be automated! This, then, vastly reduces the human effort and increases the overall reliability of the process and final product.*

Other core benefits of the (fully automated) approach include:

1. Very rapid development of new functionality (due to a different view of 'how to code');
2. An automatically generated, 100% correct 'Version Control' library, on which one can perform all kinds of smart actions/queries;
3. Less impact of imperfect code: since small snippets are tested very frequently, the errors are easier to solve (and never reach the Production phase: they are 'nipped in the bud');
4. Continuous Integration is cheaper than not integrating continuously;
5. Developers won't face anymore long, tense, even downright stressful 'weekend integrations';
6. The increased visibility throughout the process enables all participants to communicate sooner, and more to-the-point;
7. Developers will spend less time on debugging or switching between multiple tasks, and can spend more time on their core task (making new features in function of the business);
8. If implemented correctly, CI forms a solid foundation for CD, DevOps, and an Agile mode of thinking;
9. Developers receive near-instant feedback on the correct functioning of their released features;
10. By removing the traditional integration problems, the Development organisation gets the necessary 'breathing space' to develop software faster and more reliably.

Continuous Delivery (or Deployment[9])

Continuous Deployment is closely related to Continuous Integration and refers to the release into production of software that passes the automated tests.

CD focuses on what happens with the software 'Commits' that have successfully made it into the master code base. In short, it shortens the feedback loops in the remainder of the 'production train'. This speeds up the delivery aspect and renders it more reliable, by executing various tasks in rapid succession. For instance; the steady influx of code releases allows for very rapid UAT testing, allowing the Developers to work on a fix - often within minutes to hours of the flawed release!

9 *The difference is mainly that Continuous Delivery has a human verification step before things go into Production, whereas Continuous Deployment also automates this final step completely.*

The term is strongly related to 'DevOps'. DevOps additionally includes various cultural/organisational changes, as well as the actual automation aspect. Depending on your organisation's intended cooperation with your future partner, you will want to discuss thoroughly the methods, tooling, and necessary knowledge that you will need to attain for said cooperation. This, mostly, needn't be a major topic at the earliest RFI stage.

Other core benefits include:

- reduced costs - e.g. functionality that is launched but not really used by end-users, is quickly identified as 'dead-end development' that you can then terminate;
- reduced man-hours:
  - less time spent on bug-fixing due to early detection of errors, which then have less impact than would be the case under traditional models;
  - developers often receive feedback within the hour, meaning that they can continue focussing on the original task (less 'multi-tasking').

The above process steps are again fully automatable, except for human actions such as some of the UAT - and of course the actual Development efforts. Therefore, CI, CD, and DevOps go hand in hand often go hand in hand.

CI/CD as a joint endeavour of software developer and virtual infra manager

Specifically on the Public Cloud, advanced users can programmatically instruct the Cloud to create, configure, and update virtual assets and services. They send 'templates' to an interpreting service (at AWS: 'CloudFormation'; at Azure: 'Azure Resource Manager') that will translate this code into an actual Change within the user's Private Cloud.

In effect, the *infrastructure management party* has thus assumed the *methods* and *thinking framework* of the *software developer* – and this opens up new possibilities to cooperate in unique, extremely efficient ways.

2.4.3 The 'final goal' of the new way of working

The authors of **The Phoenix Project**[10], as well as other recognised visionaries such as the author of '**The Goal**[11]', emphasise on identifying the bottleneck in business operations, ranging from small-scale projects to enterprisewide endeavours. The bottleneck can be a person, process, or other resource; work tasks of all four types will 'pile up' at the bottleneck – and are then handled in order of priority. In the Phoenix Project, four main types of work are distinguished:

Business projects

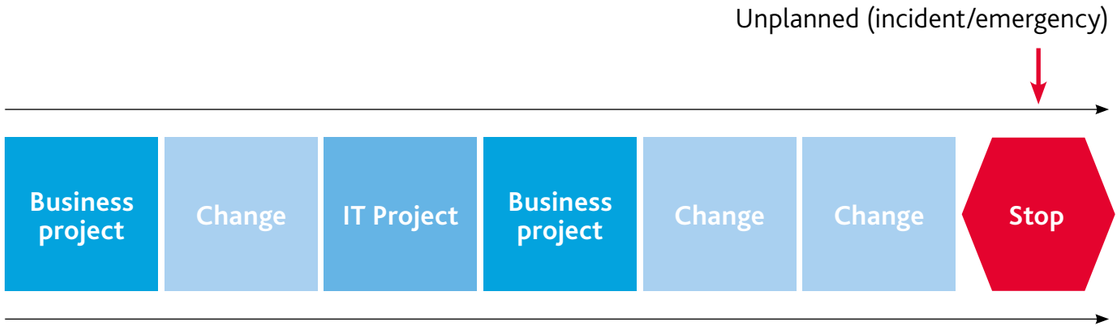
IT Projects

Changes

Unplanned work

- *business projects* are primarily customer-oriented. For the organisation's ICT coordinators, that customer will be the Business unit who should input business requirements and technological demands, that will enter into the Design phase and eventually resurface as *Outcomes of the Services delivered*;
- *IT projects* in this same context aim to *improve the organisation's performance* in any way, and are not directly related to a Business Project (although these could be triggered by one);
- *changes are beneficial alterations* to any component of a solution built as a Business or IT Project;
- unplanned work is the ad-hoc reaction to Incidents and events that often threaten a Service Outcome, and these have the nasty habit of triggering 'panic reactions' throughout large sections of the organisation (frantic phone calls, e-mails tagged 'URGENT!!', finger-pointing…).

10 *The Phoenix Project; Gene Kim, Kevin Behr.*
11 *The Goal: A Process of Ongoing Improvement; Eliyahu M. Goldratt, Jeff Cox.*



Work types in an organisation's planning and the disruptive nature of unplanned work

More often than not, the *main priority* of the Development and Operations forces *will be unplanned work* such as outages – meaning that *all other work comes to a grinding halt*! That, in turn, means that the Business units will receive their *Services* and *Changes* too late or incomplete, and when *Changes* are stalled, the result will be at least a *Risk*, potentially an *Incident*, or even a downright *Disaster*.
We are almost certain that 'priority issue' around unplanned work rings a bell with most readers. More importantly: *any time and resources poured into other topics than fixing your bottleneck, is a misplaced investment!*

You can for instance enable the Business units to consume more services (which will only get stalled at the bottleneck), or *extend the set of technological building blocks* that the bottleneck can choose from – which the bottleneck *still* can't process any faster than it could process the *already existing* building blocks.

All your efforts should therefore be primarily geared towards identifying and optimising your bottleneck, e.g. freeing it up from *unplanned work* (by documenting all such work so that 'lesser gods' such as *Tech Support* – or even better: an *automated system* – can handle those more and more). In practical terms, your bottleneck *should work on any unplanned task only once,* document/automate the solution – and from then on, continue on the *core tasks that actually contribute to your business*.

2.5 When maximally automated, …

The reader might have noticed above that CI, CD, and DevOps can be implemented without entirely automating things. In fact, this is the very reason that companies can start implementing the principles and simply start automating specific aspects in their own time.

A very important notion here is that the *more you automate, the less dependent you will be* on any given individual (both your own employees and those of your ICT partners). One practical example is that (extremely automated) Deploys can, in principle, be initiated by any Junior Cloud Engineer by 'pushing a Deploy button' in an application:

- all the 'smart work' has already been put into in the Infra-as-Code templates;
- and all other tasks up to Delivery/Deployment are fully automated.

With that in mind, the RFx-issuing organisation would do well to consider building a Roadmap for the eventual full/near-full automation of its new CI/CD-driven application management – and even including it as part of the informative section of its upcoming RFP.

3 Client & service provider understanding

A good understanding between the client (requestor) and the supplier (CSP) is imperative. The closer the appreciation between what is needed, what will work best and what is possible, the greater the chance on success. Ideally, Insights into the client's intentions and ambitions one the one hand, and CSP's insights, roadmap developments and market knowledge beyond what is formally requested are shared/made explicit. However, not all client-supplier relations can be that intimate. To bridge the gap between the client and supplier, clear questions and unambiguous answers are key. A matrix of questions is listed in the next chapter. Some of these questions need some additional explanation. Those questions and their background information and/or rationale follow next.

3.1 Company overview

Provide a company overview.

Optionally details can be specified, e.g.:

- company history;
- organogram;
- office locations;
- number of employees, globally/business unit that will actually deliver the services;
- service offering in general, and any specialisations;
- ditto, for the business unit(s) that contribute to the expected service;
- customer portfolio, including number and size of customers, and including their industries;
- service differentiators;
- optionally: which organisations does the bidder regard as its direct competitors? Although a sensitive question, it does provide very valuable information early in the RFx process:
  - does the bidder mention any potential respondents that your organisation may have missed?
  - any differences between the bidder's stated capabilities and those of its competition might indicate a weakness in the bidder's current capabilities.

3.2 Current (CSP) Partners status(es)

Explain which benefits this brings to our organisation. If applicable, also mention any certifications/recognitions that you are currently preparing for, and your current progress in that process.

Relevance: the various Partner levels come with specific benefits for the Partner – some of which should translate into *benefits for your organisation*. In general; the higher ranking in the Partner System, the more tangible benefits that Partner can likely offer to your organisation!
Asking for any certifications that the Partner is currently working on, indicates:

- their current (internal) focus points;
- and by extension, their view on the Cloud market as a whole (a party e.g. working towards a Big Data certificate, assumedly has the expectation that this topic means 'big business');
- to a lesser extent, it indicates any current 'gaps' in the knowledge that the potential partner can leverage today in your benefit (but apparently promises to be able to, at some time in the future).

Things to look for:

- high-level official supplier accreditation – all contemporary Public CSP's have, at minimum, a form of a 'Seal of Approval' that typically focusses on the technological, process, and business-side of your potential partner;
- specialisms recognised – although the different CSPs issue very different 'specialism accreditations', it is interesting to know in which fields your potential partner excels;
- named Partner Account Manager, and named Solution Architect – instead of calling the standard 'provider Helpline', a partner with direct access to qualified provider personnel will be able to better (quicker) serve you, especially under uncommon circumstances. It will also ensure that the Partner will have tech support on any newly launched Cloud service that your organisation is interested in, but with which the partner isn't yet familiar (due to it being launched so recently);
- a good 'fit' between your current expectations and the partner's current possibilities – if your organisation has a general idea of its immediate needs, compare these with

the current, provider-recognised capabilities of the Partner. If any desirable capabilities are still on their Roadmaps during the RFP process, consider including a deadline for reaching that accreditation as part of the Agreement with the Partner of your choice. Announce this intention early on in the RFP process to force the respondents to provide a realistic forecast.

3.3 Delivery & service experience

Since when do you deliver the services that you intend to deliver to our organisation, and are these part of a larger portfolio?

The question asks for experience, but also invites the respondents to describe other activity categories that they may engage in. your organisation can adapt the score for this second answer, depending on what you are looking for:

- a broader service portfolio than the RFP currently covers, might bring substantial additional future benefits. Make sure that these fit into your Cloud Strategy where possible;
- a 'pure-play' CSP will however be fully focused on the services that your organisation is currently looking into. In that case, there simply is no chance that a disaster event in another activity would distract your partner from servicing your organisation.

3.4 Business & reference cases

Provide short, but relevant business cases or reference cases.

Demonstrates the respondents' records of accomplishment. Preferably, state exactly what your organisation deems to be 'relevant' so the respondent can include facts that are useful to you, e.g.:

- *technological similarity*, which realistically would require you to do either of two things:
  - describe the application/data architecture, and business processes these support, so that the bidder can estimate the necessary technologies and processes;
  - prescribe which technologies you will need (if you have sufficient Cloud design capabilities);
- *ICT operational management approach:* in the introduction, we have argued how CI/CD should be relevant – if not immediately, then most definitively some time down your Roadmap. Respondents should describe how they see this topic;
- *market similarity:* is the bidder familiar with the relevant peculiarities of your type of organisation? Preferably, specify exactly which 'matches' you are looking for.

Advice: the required matches potentially can be dispersed over various references, e.g. one could prove the technological match, whereas another could prove market similarity. Adjust your scoring system accordingly.

3.5 Organisational stability

Substantiate your organisational stability.

Prove points could include (consider asking specifically for any or all of these):

- financial stability;
- sound financial management, to be demonstrated with:
  - examples of process descriptions/prove for financial planning, including forecasting, budgeting, and review of financial metrics and reports;
- organisational structure:
  - shareholder structure including list of main shareholder(s);
  - diversity of main activities of the bidding entity: is the proposed service its core business, or something on the side? If the latter, that activity could potentially be sold off (with negative effects on your organisation's service experience);
- any recent or planned acquisitions/mergers, or similar events that materially have altered/could alter the company's overall stability in all of the above-mentioned respects.

Suggestion: to prevent a 'sales sunny-side up' answer to these questions, insist that this (some of) the responses will become part of the eventual Agreement. This will force the bidder's Legal/Compliance and Financial teams to be included early on in the bidding process, resulting in a realistic, reliable answer.

3.6 Certifications

List relevant certifications and provide (a link to) a source document that describes what the certificate entails exactly.

Ask specifically for relevant certifications only, including a description/hyperlink that gives a short overview for readers that are not familiar with the certificate:

- personal vendor certifications;
- here obviously: CSP accreditations such as certified Solutions Architects/Designers; most respondents might not want to mention names but should be able to provide a table with the number and types of staff certifications;
- any other certifications:
  - freeform response, gives insight into the staff's maturity level and 'fit for job';
  - although ITIL isn't the first personal accreditation that comes to mind when thinking 'Cloud', there definitively are many aspects to ITIL that have survived the Cloud Enigma without any change. Examples include Incident Management, Problem Management, and Continuous Improvement – although their practical implementations differ somewhat when used around Cloud Computing.

Bidders that have ITIL-certified staff members in relevant (senior/mid-management) positions will more likely have time-proven business processes in place, and a generally broader-trained management.

3.7 Design capabilities

Demonstrate design capabilities using an existing customer that will be available as a future reference (or provide a thorough, 'named' business case). List the original requirements, and describe the resulting solution.

Ask the bidder to provide a (any) design of an actual, live environment of its choice. The customer must be available as a reference at a later stage of the RFP process (e.g. in the Preselection phase), or has pre-approved the named business case.

Rationale:

- on the surface, this gives the respondent a chance to showcase its best and most relevant reference;
- a secondary goal is that it helps to 'sift out' any bidder that is purely platform-driven instead of application/business-driven. After all; the technology underneath your organisation's application is nothing more than a 'vehicle' for a certain business process;
- therefore, the question simply asks for 'the original requirements'. If that list only contains techno-babble, this indicates that the organisation is likely very 'tech-heavy' and not so 'business-savvy';
- your organisation would do well to decide, on beforehand, which type of partner it is looking for and then adjust its scoring system accordingly.

3.8 Best Practices

Explain best practices applied and, briefly mention any other Best Practices that your organisation uses during the Design, Build, and Operate phases.

By not specifying which Best Practices you are looking for, the respondent should autonomously mention various lists and recommendations (mostly Provider-issued, often some industry-standard ones).

3.9 Service continuity -vs- Service flexibility

Describe continuity (e.g. through standardisation, so that the loss of a 'single point of failure' employee won't affect the continuity), versus flexibility (the ability to deviate from your standards, to meet a specific customer requirement).

The free-form answers will vary widely, but will provide insight into the respondents' vision on how to remain flexible in their service delivery, without making each project a 'one-off' that will be difficult to maintain if a change occurs in *technology, process*, or *organisation* (here specifically meaning: *personnel churn*).

Rationale: a respondent that bends over backwards to fulfil your every wish, however exotic it may be, will create a customer portfolio full of 'one-offs'. This is the typical start-up mentality: gaining market share always prevails over 'future scalability'. It is quite possible that a request can be fulfilled only by deploying one 'single point of failure' Engineer – which will then introduce a new Risk - that can even remain invisible to your Security Officer[12].

Conversely, a respondent that is fully standardised in its service options might prove to be too inflexible for your current/future business needs… Although difficult to assign a score to, this particular question will be – at minimum – useful to filter out the dangerous 'start-up mentality' bidders.

3.10 Service Level Targets

How do you ensure that you will consistently meet the agreed service levels.

Although partially covered under another question, this request should prompt the respondent to explain how it has implemented measures to live up to its SLA-based guarantees. The 'catch' here, if you will, is that the more *flexible* the SLA structure is, the more *difficult to accomplish* it becomes. A secondary goal is to identify which respondents do not understand what an SLT is (if ITIL-capacities are part or your organisation's requirements).

3.11 Monitoring capabilities

Describe monitoring capabilities, specifically in relation to Cloud-based services, and demonstrate an existing implementation.

A quality Public CSP (one of a higher calibre at least) will have knowledge of the 'new way of working' and how this aspect fundamentally differs from traditional ICT Service Management. Consider the optional use of the exact term '*Next-Generation Managed Service Viewpoint*' (originally coined by AWS, the concept readily applies to any mature Public Cloud platform). The bidder could respond with most or all of the following – yet should always include *automation* and *driven by DevOps* in its response:

- vision documents;
- service descriptions;
- anonymised proposals demonstrating 'Next-Gen' capabilities;
- blog/web/social media publications;
- other relevant elements.

Suggestion: in whichever form the response will come, look for *tangible proof* that the respondent indeed applies higher-level monitoring. Instead of a simple 'all lights green' approach that monitors the 'live status' of virtual machines and provider services, the monitoring should include parameters that are *much more directly relevant to the business*. Consider asking specifically for examples of how the respondent has implemented *business KPI monitoring* for its internal business, and for (your) customer purposes. The fact that the underlying virtual machines/services are 'live', should be a given already due to the bidder's Design approach.

3.12 Data continuity services capabilities

What/how do you backup in ways that contribute directly and indirectly to our organisation's data survivability/service continuity?

The respondent should answer with all its capabilities, *including* those that it primarily uses for its own purposes. After all, a failure in its own ITSM can easily affect its ability to service your organisation as agreed.

3.13 Cloud service fluency

Demonstrate fluency in the cloud services that will become part of the solution.

Save this question until the 'shortlist' stage, to limit the respondents' time and that of your organisation RFP team (because this question will result in quite a lot of work on both sides of the table).

1. ask for proof-points in the form of anonymised proposals/live designs, indicating the relevant service components with an explanation of their individual role in that design;
2. ask for confirmation that the Cloud services offered are indeed available in the geographical area ('Region(s)') that the solution will run in. Any bidder that has offered a service without realising that it is actually not available in your Region(s) of choice, may have made other profound errors, and will potentially make future errors. Such a bidder should be regarded with some caution.

The latter is a secondary reason to save this question for a later stage.

3.14 Job Change protocols

Ask for substantiation of a mature Human Resource approach to hiring and firing (including a change of position within the company). Specifically in this field of ICT, staff rotation is above average and a simple mistake (such as forgetting to deactivate a user account after firing) can have potentially devastating effects on your organisation's service experience, Information Security, and any business process that relies on the service delivery. Bidders should be able to present checklists in some form, anonymised, that mention such practical steps and checks.

3.15 Data ownership

Describe data ownership (IP, our organisation's end-user Personal Information), and the division of responsibilities between the different parties.

Question can be split up.

The bidder must be able to demonstrate its understanding of, and compliance with, current and future legislation (specifically GDPR, into effect early 2018), especially in the field of the handling of any data that relates to your organisation and its customers. Suggestion: although you needn't specify the type of proof-point, the expected responses could be:

- examples of contracts templates or real-life ones, anonymised, that mention the handling of data during operations, termination, and potentially during transferral to another contract party;
- management declarations or operational documentation on GDPR-related topics (e.g. Data Breach Notification protocol);
- account & data transfer arrangements at termination/ transferral as part of the agreement;
- operational documentation on the disabling and/or removal of users, groups, federation, etc.

Advice: either include your Legal team or consider hiring an external advisor to complete this question with topics relevant to your specific organisation. Non-conformance to GDPR may result in massive penalties that easily outweigh these one-off costs/efforts.

12 *On a side note: a common mistake is that the Security Officer/ISB is included in the RFP process, but loses grip after the initiative goes into the Operational phase. CI/CD allows for minor Changes to be performed very often and quickly, yet can still have far-reaching effects. Mechanisms to enforce Security 'from the bottom up' must replace the old-school, 'manual' inclusion of the SO / ISB with every Change.*

3.16 Financial Management/reporting

Describe your activities around financial management & reporting.

In its role as a service provider, any bidder must logically be able to:

- present the original Cloud bill to your organisation;
- present its own added costs in conformance with the corresponding original price quotation(s);
- extrapolate variable costs to predict (granted: with some leeway) substantial excess costs over earlier cost prognoses (if provided).

A bidder *preferentially* also is able to deliver advanced Financial Management inputs, either through its own means, Cloud-based tools, and/or 3rd-party products that are well integrated with the Cloud platform and/or the tooling of your potential partner. Example capabilities may include:

- split up costs per department/activity or cost centre/ application owner or beneficiary;
- facilitate charge-back/charge-through;
- identify (and report on) unusual variations in usage patterns;
- provide retrospective ROI evaluations, and forward-looking what-if scenarios/cost predictions;
- preferably, any other expansion on the Cloud-native cost reporting/management functions that your organisation deems necessary.

Suggestion in that last respect: include your Financial and ICT departments, and a Senior Management member, early on in a discussion about which cost factors these would require to fulfil their respective needs. For example: ICT might want to know what costs a specific development project is generating, or which assets (among all current projects) *do* exist but are actually *not* being used. Senior Management will have much higher-level, lower-detail requirements that may, or may not, be addressable with the native Cloud functionalities. We suggest making sure that such demands are listed *before* sending out even an RFI.

3.17 Cost savings

Does your financial reporting also include proactive identification of possible cost savings? Please provide example(s) of customer(s) that we can later contact as reference(s).

This question speaks for itself. The addition of 'example(s)' that your organisation could contact later on, ensures that you'll receive real-life examples. The bidder will additionally try to prove its compliance with your request by sending your organisation its best examples of such 'financial proactivity', which in turn will contain valuable information for your organisation to use in its future negotiations with the bidder.

3.18 Security (Current)

Explain how you secure your own systems (Security Management); demonstrate by proving a relevant certification and description of the scope, or provide alternative proof of infrastructure security and information management processes and the associated approvals.

Obviously, the partner's own internal systems will connect to your organisation's environment and should be fully secured. An industry-standard accreditation such as ISO 27001 is a good start, provided that *its scope covers all relevant assets* (and the certificate has been renewed over several consecutive years – because most such standards allow for a long 'remediation period' of any errors/discrepancies).
Suggestion: most parties will be unwilling to show you their full Information Security Policies at the earlier stages of an RFx process. Consider making the demand that the bidder must provide insight if it should enter into the pre-final phase (often with only 2 or 3 bidders left). By then, the higher commercial chance on winning the RFP will form a powerful incentive for the partners' sales representatives to 'push' their Security Officer to free up (sufficient sections of) the Policies to satisfy your information request.

3.19 Security (Future)

Explain how you will secure our organisation's future environment, based on the information currently available. Where strictly necessary, make assumptions and expressly mention these.

This question is difficult to answer, since the final design isn't available just yet. Therefore, consider postponing this question to a later stage of the RFP process. However, any Information Security Policy that *also cover the customers' environments*, will have plenty to tell you *at the earliest stage*.

Advice: respondents that won't answer the question in the absence of an existing design, might be excused (at your organisation's discretion). In those cases, consider finding out if they gauge the risk of making the wrong assumptions too high to take. Failure to answer the question could however also indicate that their ISMS does not contain standard clauses covering customer environments, which in itself may be considered a drawback at your discretion.

3.20 Service levels

Provide your (standard) SLA. If it is customisable, please specify which additions are possible, which parameters may change and other relevant service level elements.

The Service Level Agreement states the 'minimum service levels' (Service Level Targets), typically including a penalty clause that kicks in when the service provider doesn't meet these minimum requirements. A completely 'fixed' SLA means that your organisation would have no options to change anything in this 'minimum guarantee', which could prove a problem (this of course depending on your expectations of the SLA's conditions and SLTs). An SLA that always is adapted specifically to each individual customer, *does* give optimal flexibility for your organisation – but – it also means that the *service provider must be able to comply with each individual SLA* (even under large-scale Disaster circumstances with many customers severely affected). That clearly will not scale very well, meaning that the chances on errors increase with *the number of customers* that the provider services, and the *extent to which the SLA is unique/tailored to your organisation*.

Things to look for:

- *sufficient flexibility* to fulfil your organisation's needs, in terms of:
  - hard guarantees versus 'best effort' (the latter basically says '*we will do our best but can't promise anything*');
  - measurement period of percentages, e.g. a 'downtime percentage' when measured over a year is 12 times longer than when measured over a month;
  - response times to events and requests, and *Resolve* times (if provided at all);
  - availability of support and systems management ('Service Hours');
- *sufficient standardisation* to ensure that the service provider will actually be able to comply with the agreed parameters, even under Disaster circumstances (i.e. no need to re-read the SLA document before taking appropriate action!).

3.21 Service level improvement

Describe how you improve your SLA.

Rationale: as the SLA should closely reflect the actual service delivery, the quick development of Cloud-based services means that the SLA should keep equal pace with some of those changes. The bidder should have ample proof that it actively updates its SLA to follow developments in its own service portfolio and that of the CSP. A sound updating process also indicates that the partner has a mature Product Management mechanism in place. The popular Public CSPs are still developing their portfolios at an astonishing speed (driven by competition and portfolio gaps). Your potential partner should preferably be able to keep up with these rapid developments in a structured, professional fashion.

3.22 Asset Management process

Describe your Asset Management process, specifically for Cloud resources.

Although the ITIL concept of Asset Management has survived the Cloud era, the old-school methods no longer apply. Assets[13] come and go on-the-fly, services change their capacity/volume/properties (if a true Event-Driven Architecture is used) – so the traditional CMDB would go out of date within minutes. The bidder might implement the tracking and reporting of asset 'Value' and ownership with various Cloud-specific tools and/or 3rd-party solutions, but should generally describe:

- how the standard 'metadata' of the virtual assets is used;
- preferably also custom-made 'tags' of 'identifiers' (that can tie an asset to a specific project, department, etc., which would otherwise be very difficult to do);
- the tagging policy/practice on which the latter is based;
- if using an external Asset Management solution, how the Cloud-specific information integrates with that solution.

Advice: many organisations will have their own, existing Asset Management solution in place. Feeding information from the Public Cloud into that solution might be possible (as in the case of, say, ServiceNow), but please be aware that this is only practical for the *reporting* side of things. Cloud *management* is best performed using the Cloud-specific toolsets (or tailor-made 3rd-party alternatives), and additional tools that are generally accepted and deployed for supporting processes such as Continuous Integration and Deployment (Bamboo/Jenkins and their like). Assuming that the bidder indeed has the above-mentioned process in place, you should be able to get a report (either live, through an application of sorts, or through a report that the bidder manually compiles).

3.23 Service management elements

Describe your standard Incident Management, Problem Management, and Change Management processes.

Any professional bidder will have had this question before, and should have clear answers. Things to look for, or proactively ask for, could include:

- ITIL conformity – although the implementation will be different in the Cloud, the basic concepts still apply. A party that has adapted its existing ITIL processes to match the Cloud's unique capabilities, proves that is has a long-standing process – and – the capacity to adapt it to the Cloud era;
- congruency with SLA – the Service Level Agreement and these processes should be exactly aligned. Any error in this respect indicates a less-than-perfect cooperation between Product Management, Legal, and Operations teams of the respondent;
- degree of automation – a properly designed 'Event-Driven Architecture' on any Public Cloud will feature many automated actions/reactions that traditionally would require manual intervention by the bidder's engineers. If the process descriptions feature only little automation, that bidder is likely not using the Cloud's full potential for extreme automation (which leads to higher personnel costs, and therefore a higher cost for your organisation);
- Change Management-specific:
  - rollback – a rollback to an earlier state of an asset, or group of assets, is technically possible (and fully auto-matable). Any manual actions described in the process indicates a less-than-perfect implementation at the bidder's operational organisation;
  - CMDB – a Configuration Management Database function should exist, that fits with the Cloud platform and the inherently fluent nature of the Cloud-based assets/services.

3.24 Service management evidence

Provide examples of an Incident Management report, and a Problem Management report (Root Cause Analysis).

The structure and content of these reports are good indicators of the bidder's maturity. For instance: a failure to correctly distinct a 'contributing factor' or 'trigger' from a *Root Cause*, indicates a lack of understanding of the underlying principles. That, in turn, could very well indicate that the *operational behaviour* of the bidder suffer from the same, meaning that it might operate less professionally than your organisation should expect.

3.25 Performance report

Provide example(s) of a Performance report of a Cloud-based solution.

Advice: instead of this freeform question, your organisation may consider to define which performance metrics it requires (or the general categories).

3.26 Risk mitigation

Demonstrate Risk Mitigation capabilities.

A mature organisation has a sound Risk Management process in place[14] to protect its own direct interests, and by extension, yours as well, against Risks that stem from its own organisation. This is readily demonstrable with Risk Analysis Matrices that identify a Risk, assess the Impact, provide Controls to negate/minimise the Risk, and preferably identifies the Residual Risk. Areas of interest may include:

- loss of (main) supplier(s);
- loss of key staff members, most notably: CTO, CEO, CIO, SO;
- loss of office/production locations (e.g. data centres);
- etc.

Suggestion: limit your request to only those areas that your organisation deems *most relevant* to its current and future project/business requirements. Otherwise, respondents will often become hesitant to provide that much evidence (or are even unable to do so, as internal policies prohibit the responding business entity from sharing such information).

3.27 Deployment process

Describe the practical (Cloud resource) Deployment process, including patching/upgrading.

This question will show out the extent to which the bidder indeed adheres to the CI/CD principles. Elements to look for:

- the way that the respondent manages, and deploys, the 'virtual infrastructure templates'.
- If the response contains mainly manual sets of tasks, the bidder does not use the Cloud's possibilities optimally;
- a clear distinction between the 'work flow' of the In-fra-as-Code, your own application code, and how/when in the process the two come together. A true Cloud CI/CD implementation will feature a highly automated method of combination of your code with the 'infra code';
- a high degree of customer-enablement; one area of special interest is entailed in the following question.

3.28 Application release & deployment

Describe the overall application Release and Deployment strategy.

When engaging in true CI/CD, 'virtual infrastructure' and the application come together in a shared Deployment process. Therefore, many topics that a traditional service provider would fully leave to your organisation (e.g. application testing) *can* be, and preferably *should* be, offloaded to the service provider. The response should mention how your organisation can 'trigger' the process itself, without having to contact the partner (note that industry-standard tools exist, and are being actively promoted by the prominent CSPs).

Rationale: if the respondent's answer does not include *your* application as an integral part of its strategy/process, including your self-service ability to initiate the Deployment process, that bidder is not using the CI/CD approach to best effect. It could also indicate that this bidder is infrastructure-centric, rather than business/application-centric.

13 *An asset is any resource or capability that can contribute to the delivery of a Service. In the context of the Public Cloud, these could be an abstracted Relational Database Service, a virtual machine/Instance, …*

14 *Organisations with an audited ISMS in place (e.g. ISO 27001), will often have no practical problems producing such information (but may require you to sign an NDA, or be hesitant during the early RFx phases). Bidders that do respond to the question, but are not certified, will require extra attention as these will likely miss other aspects of a proper ISMS implementation. Assign these a lower score, and/or have your Security Officer confer directly with the Bidder's Security entity to pinpoint any caveats.*

3.29 DevOps

Describe the DevOps aspects of Release and Deployment.

1 True DevOps blurs the lines between Development and Operations. In this context of a managed Cloud environment, the bidder fulfils the role of the '*virtual infrastructure Developer*' (not: 'hoster'!) and *Operations*, with your organisation (and/or an ICT partner) in the role of *application Developer*, and *application Operations*. All of these entities will work much more closely together than in the traditional setting;
2 Secondly, the short Release/Deploy intervals inherent to the CI/CD & DevOps combo (and its consistent reliability of each release) stem for a large part from a *high degree of automation*. The bidder's answer should therefore include these elements:
   - a repeatable yet configurable mechanism to design its contribution to the entire stack (its 'virtual infrastructure' part);
   - automated combination with your application;
   - automated provisioning;
   - methods/processes to bring Developer and Operations closer together.

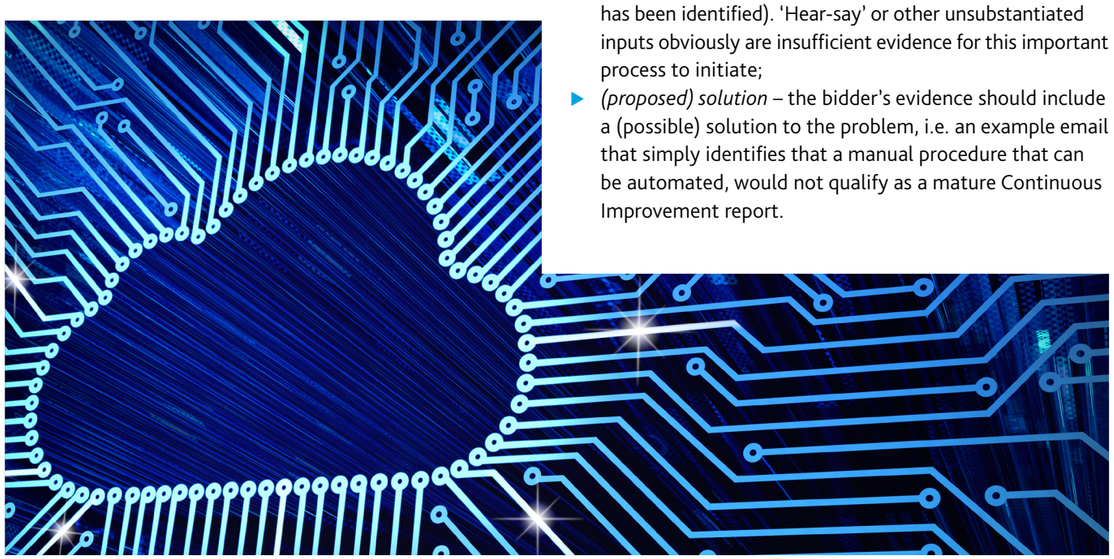
3.30 Automation

Explain how you identify manual operational activities as candidates for automation. Provide evidence of the improvement process (possibly in the form of an internal, anonymised report).

On one hand, this question might guide the less-well DevOps oriented respondent into the right direction (its goal should obviously be: maximally automating processes to reduce the costly, slower, and more fault-prone human interventions). Your organisation can consider leaving this question out if you want to maximise your ability to identify respondents that claim to adhere to DevOps, but actually don't fully live up to their claim.

If you include this question, key elements of the response should be:

- *regularity* – instead of a yearly review, a more regular method must be employed (so as not to lose sight of any important event) – optimally even a per-Event-based feedback loop;
- *actual issue* – regardless of how such candidate activities are identified (programmatically and/or manually), the proof-point/report should mention an actual, measurable/provable cause (and possibly the method through which it has been identified). 'Hear-say' or other unsubstantiated inputs obviously are insufficient evidence for this important process to initiate;
- *(proposed) solution* – the bidder's evidence should include a (possible) solution to the problem, i.e. an example email that simply identifies that a manual procedure that can be automated, would not qualify as a mature Continuous Improvement report.



3.31 Customer satisfaction

Describe how you measure customer satisfaction at all levels of the customers' organisations, and provide evidence of processing customer feedback.

Customer satisfaction is the only real 'thermometer' that counts. Your organisation will want to ensure that its wishes are treated with the right attitude and respect – something that an existing 'customer satisfaction' mechanism will help ensure. Regardless of the technological implementation that the respondent may mention (letter, email, some application), the response's key elements should be:

- *neutral processing* – good news of bad news: the bidder's staff should not be able to alter/filter out any customer feedback. When using traditional letters, or e-mail, using an external surveyor is highly advisable;
- *multi-level feedback paths* – due to the 'blurred lines' between application and virtual infrastructure, your organisation/its application partner and the bidder will cooperate much more closely than has been the case in the past. Hence, feedback paths should exist between Dev and Ops, Service Managers and Stakeholders;
- *Strategic alliance* – for strategic applications, direct communication paths should exist between the respective Senior Management members (CEOs, CTOs/CIOs, and COOs). Some things are best discussed among equals and this goes for higher management as well. Note that evidence of liaising at this level might be difficult to acquire.

3.32 Operational reviews

Provide an example of (customer) Service Review meeting notes, and of the follow-up on improvement requests (if any are present in your example).

A freeform question, the bidder can provide you with its best example. What can be learned from it, will differ with the various responses. Having such examples in your possession, also serves a longer-term goal.

If during the Operational phase your organisation would have a substantially less professional experience, you will have *very good grounds* to demand better service in this respect. Service Review mostly serves at the *tactical level* and forms an additional bond between the 'layers' of the organisations that partake in it. Having a good Service Manager assigned, is a great tool to improve your service experience continually as the business relation develops over time. Consider asking for a description of the Service (Level) Management process at large – but know that this might result in some lengthy documentation per respondent.

3.33 Continuous improvement

Demonstrate the Continuous Improvement cycle of your own organisation (of processes, tooling).

Important elements:

- regularity of the reviewing activities;
- proper conclusions of the topic to be improved, and definition of improvement;
- clear definition of intended outcome. Under (ITIL) Continuous Improvement this must be a measurable fact:
  - identifiably improved service experience by customers;
  - financial improvement expressed in tangible format;
  - defined shorter runtime of a procedure/action;
  - other relevant items.

4 Further questions

Some of these questions are somewhat short; with the above-provided background information, your organisation can fine-tune the questions to fit your needs.

4.1 Organisation

- Provide a company overview.
- Substantiate your organisational stability.
- Demonstrate proper Hiring/Firing/Job Change protocols.
- *(At a later stage):* Now that the scope of the project is reasonably clear (and thus, the costs), 'guesstimate' our position in your customer ranking (e.g., are we your largest customer, third-largest).

4.2 Services, general

- Since when do you deliver the services that you intend to deliver to our organisation, and are these part of a larger portfolio?
- Describe your monitoring capabilities, specifically in relation to Cloud-based services, and demonstrate an existing implementation.
- Describe your backup capabilities in general. What/how do you, and can you, perform backups that contribute directly and indirectly to our organisation's data survivability/service continuity?
- Describe your activities around Financial Management/ reporting.
- Does your financial reporting also include proactive identification of possible cost savings, even if these would affect your own revenue? Please provide example(s) of customer(s) that we can later contact as reference(s).

4.3 Service envisioned for our organisation

- Demonstrate design capabilities, using an existing customer that will be available as a future reference (or provide a thorough, 'named' business case). List the original requirements, and describe the resulting solution.
- For the above reference case, explain which Best Practices were applied. Separately, briefly mention any other Best Practices that your organisation uses during the Design, Build, and Operate phases.
- Provide [number] short, but relevant business cases or reference cases.
- *(At a later stage:)* Demonstrate fluency in the Cloud services that will become part of the solution.

4.4 Service Management

- Describe the general division of roles and responsibilities between you and our organisation (e.g. RACI or similar).
- Describe your Asset Management process, specifically for Cloud resources.
- Provide an example Asset & Resource report.
- Describe your standard Incident Management, Problem Management, and Change Management processes.
- Provide examples of an Incident Management report, and a Problem Management report (Root Cause Analysis).
- Provide example(s) of a Performance report of a Cloud-based solution.
- Describe the practical (Cloud resource) Deployment process, including patching/upgrading.
- Describe the overall application Release and Deployment strategy.
- Describe the DevOps aspects of Release and Deployment.
- Explain how you identify manual operational activities as candidates for automation. Provide evidence of the improvement process (possibly in the form of an internal, anonymised report).
- Describe how you measure customer satisfaction at all levels of the customers' organisations, and provide evidence of processing customer feedback.
- Provide an example of (customer) Service Review meeting notes, and of the follow-up on improvement requests (if any are present in your example).
- Demonstrate the Continuous Improvement cycle of your own organisation (processes, tooling, …).
- Describe your Service Desk/Helpdesk function.
- Describe any Self-Service facilities that you can offer us, e.g. tools to enable our organisation to self-deploy code without your assistance.
- Describe how you will keep track of newly released CSP services. How fast can you make these available for customers?

4.5 Certifications, accreditations

- State your current (Cloud supplier) Partner status(es), and explain which benefits this brings to your organisation and our organisation. If applicable, also mention any certifications/recognitions that you are currently preparing for, and your current progress in that process.
- Mention any relevant personal certifications. Provide a (link to a) source document that describes what the certificate entails exactly.

4.6 Security and Compliance

Note: Incident and Problem Management descriptions were asked for in another section. If your organisation did not include that question, consider including these here.

- Does a Non-Disclosure Agreement, or similar arrangement, apply to your employees, suppliers, and/or customers? Provide a proof-point of each applicable category.
- Describe your Security Management and Compliance Management organisation (neglect the question if this is clear from an organogram that you have included with another response).
- Our organisation has its own Information Security Policy. How do you suggest integrating (relevant portions) into the Cloud environment's configuration and surrounding operational processes?
- Specify which portions of the services you will subcontract to a 3rd party.
- Mention to which standards are you certified, company-wide. Also specify which standards apply specifically to the business unit that will deliver the services to our organisation.
- What is the interval of (independent) external audits, if any?
- Describe your Access Management strategy, or provide your AM Policy. Neglect the question if provided as part of a larger Information Security Policy.
- Demonstrate your Risk Mitigation capabilities.
- Describe your Business Continuity and Disaster Recovery measures; provide the BCP and/or DRP, or another proof point.
- How many Security Breaches that (potentially) have affected customers, has your organisation had over the last 5 years?
- Demonstrate your handling of a Security Breach that has affected customers, if any. If none, provide a hypothetical scenario. Explain the process from the moment that the Breach is identified up to and including the customer communication.
- Describe how you ensure segregation of the data of different customers.
- Describe data ownership (IP, our organisation end-user Personal Information), and the division of responsibilities between you and us.
- Describe the available encryption / protection methods and/or processes that will ensure that only our organisation can access sensitive information (e.g. our customers' personal information, financial data, …).
- Explain how you secure your own systems (Security Management); demonstrate by proving a relevant certification and description of the scope, or provide alternative proof of infrastructure security and information management processes and the associated approvals.
- Explain how you will secure your organisation's future environment, based on the information currently available. Where strictly necessary, make assumptions and expressly mention these.
- Describe your abilities to facilitate auditing of our organisation's Cloud environment, e.g. secure logging, archiving, and log retrieval.
- As a highly 'visible' organisation, our organisation may require DDoS protection at some point in time. Describe your capabilities to detect/protect.

4.7 Contract & legal

Note how we left out the traditional 'background check' question on personnel. In most European countries, the law puts so many constraints on this, that the question becomes rather void. Instead, the first question below could prove useful (but difficult to prove the answer).

- Do you check references for potential employees (e.g. earlier employers)? Provide proof if possible.
- Provide your (standard) SLA. If it is customisable, please specify which additions are possible, which parameters may change, etc.
- Describe how you improve your SLA.
- Describe your Bonus/Malus or penalty arrangements, or state where these are found in the contract example that you have included.
- Under which legal jurisdiction will the services be delivered?
- Will your organisation or our organisation be the contractor of the CSP services? If this is your organisation, explain how we will get ownership of the services under the following circumstances:
  - termination by our organisation, as per a regular, mutually agreed termination process;
  - termination by our organisation under extreme conditions (e.g. your organisation goes out of business, Acts of God preventing you from delivering services, etc.);
  - termination by your organisation for any reason (also state which, if any).
- How do you handle extremely sensitive information that is stored in/processed by/transmitted to or from the Cloud environment?
- Describe how you balance Service continuity -vs- Service flexibility: *continuity* (e.g. through standardisation, so that the loss of a 'single point of failure' employee won't affect the continuity), versus flexibility (the ability to deviate from your standards, to meet a specific customer requirement).
- How do you ensure that you will consistently meet the agreed Service Level Targets?

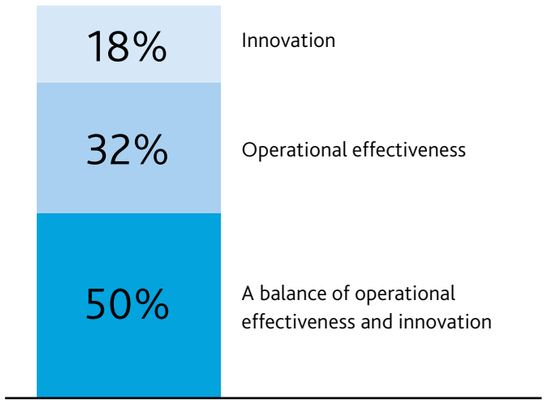
5 In conclusion

In BDO's recent Global Risk Report 2018[15], 167 interviewed C-suite executives across EMEA express their concerns about risks to their business model whereby Innovation and agility are pointed out to be essential.

The driver for business success is seen mostly as operational effectiveness, followed by innovation (see Chart). To ensure their businesses are sufficiently futureproofed against the factors disrupting their business model, the reports concludes that leaders will need to balance operational effectiveness with radical change and an increased appetite for innovation.

Technology is the enabling foundation for change, with Cloud Computing and the subsequent technological innovations which it drives as a key ingredient. At the same time, cloud can significantly support operational effectiveness. Not a surprise therefore that the uptake of Public Cloud is growing at such a significant pace, and will come to grow even further in the years to come.

Despite some hesitation in the market, many companies have recognized the innovative enabling qualities, adopting cloud services or going as far to express a "Cloud Unless" or even "Cloud Only" strategy.



Recommendation

Essential in the adoption of cloud services is the selection of the appropriate cloud service provider(s) that can guide your organisation to optimally use these services. The focus of this paper has been to identify the most relevant selection criteria that are key in selecting that right partner and subsequently presenting these in a practical set of questions.

At BDO we understand that specific elements involved in the selection criteria can be challenging to clearly outline and unambiguously define. Our specialists thrive to make a difference and share their knowledge and experience. Please feel free to contact us when appropriate.

15 https://www.bdo.nl/nl-nl/perspectieven/

More information?

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Appreciation

This whitepaper has been realised by examining market developments, client cases, interviews, and the valuable insights of Sentia MPC. We herewith like to thank all involved persons for their participation and efforts.

new focus

New opportunities frequently arise in these times, which are characterised by new technology, artificial intelligence and the Internet of Things. The key is to remain focused and not shy away from making bold decisions. Our BDO advisers are happy to assist in this regard, by giving you a fresh perspective on your business.
Our knowledge of the market and our targeted approach offers insight and impact that will make your company or organisation more successful. We create new perspectives together.

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