Assessing REAL Value from Cloud Concepts

A methodology to determine the right amount of investment in cloud infrastructure for near term and long term agency objectives.
Wikipedia Definition for Empirical

The word **empirical** denotes information gained by means of observation, experience, or experiment.[1] A central concept in **science** and the **scientific method** is that all **evidence** must be **empirical**, or empirically based, that is, dependent on evidence or **consequences** that are observable by the senses. It is usually differentiated from the philosophic usage of **empiricism** by the use of the adjective "empirical" or the adverb "empirically." "Empirical" refers to the use of working **hypotheses** that are **testable** using **observation** or **experiment**. In this sense of the word, scientific statements are subject to and derived from our experiences or observations. **Empirical data** are **data** that are produced by **experiment** or **observation**.
Methodology

Architecture-Based Analysis for Cloud Investments

- Engage with the Agencies to Learn Business Issues
- Set the Scope for Cloud Consideration
- Determine the Decision Team
- Capture / Document the Current Business / IT State
- Compare Current State Against Strategic Plan
- 5 Pillar Alignment
- Gather Vendor Data for the Cloud Architecture Options
- Construct Possible Scenarios for Decision Team
- Conduct Impact Analysis on Possible Scenarios
- Determine Proper Degree of Cloud Support
- Develop a Cloud Integration Roadmap (if needed)

Repeat as needed
Engage with the Agencies to Learn Business Issues

Under my current budget, I cannot add capabilities (no money). Can a cloud configuration help me re-allocate my "hard" asset portfolio so that I can accommodate increased capability requirements without doing a Cap Ex?

Our organization is downsizing and I need to consolidate. Could I "outsource" enough infrastructure to a service provider to close a location?

I want our organization to become a cloud "provider" because the infrastructure is critical to our mission. Can I make the case for our capability to be a reliable provider?

Is there any carbon footprint advantages associated with switching to a cloud network?

How would I re-arrange my portfolio to optimize cloud computing capabilities?

What are my new systemic risks as a result of depending on a source that I do not completely control?

What business analytics address the business problem and/or mitigate risks?

“I do not want technical jargon, I want business answers [expletive optional]”
Engage

- Engage with the Agencies to Learn Business Issues
• Set the Scope for Cloud Consideration
- **Determine the Decision Team**

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Responsible</strong></td>
<td>The person who will be instrumental in the conceptual development of all/parts of the products from the workstream. This person will ensure that the rest of the team can support the product. Note: could be more than one person.</td>
</tr>
<tr>
<td><strong>Accountable</strong></td>
<td>The person who is listed as the team lead and will “drive” the workstream products. S/he will ensure that the SIG leadership, website, and other communications are current and that the team remains engaged. Note: Only one person.</td>
</tr>
<tr>
<td><strong>Consulted</strong></td>
<td>These are members who feel that they should be part of any key decisions regarding the workstream products. These people will attend most (if not all) of the workstream team meetings and will offer constructive critiques of the format and content of work products before it is localized to the larger SIG, GAP, and other audiences. Consulted members may or may not be part of the SIG (i.e., academics, other SIGs, etc.).</td>
</tr>
<tr>
<td><strong>Informed</strong></td>
<td>These are members of the EA community who consider the workstream products to be important to their product offering, agency agenda, etc. These participants agree to get information relevant to the workstream but may not attend meetings that help to form work products and deliverables. They will provide feedback for use and acceptance, contributing valuable metrics and lessons learned, to kick off continuous improvements and sustained collaboration relationships.</td>
</tr>
</tbody>
</table>
• Capture / Document the Current Business / IT State

As-Is

- People
- Processes
- Applications
- Infrastructure
- Implementations

Load data for:

- People
- Process
- Applications
- Infrastructure
- Implementations

This data can be captured using a simple method (tabbed spreadsheets) or more sophisticated (CMDB, ERP, etc.).
Regardless of the tool, the scoped organization must have:

1. **Logical** representation of the assets for the organization, and
2. **Linkage** between the assets and Key Performance Indicators (KPI) needed for cloud analysis, (cost, reliability, behavior, etc.)
- Compare Current State Against Strategic Plan
- 5 Pillar Alignment
OMG Business Motivation Model

- **Align**
  - Compare Current State Against Strategic Plan
  - 5 Pillar Alignment

**Mission**
- Generate sustainable, high quality returns for our customers. Help build valuable customer relationships by helping customers grow and protect their assets.

**Business Vision**
- Help customers around the world feel confident about their future wealth and wellbeing.

**Business Goals & Objectives**
- Desired Result 1
  - Create capital efficient, innovative solutions
  - Number of new products to market

- Desired Result 2
  - Leverage investment management expertise and performance
  - Number of new market routes

**IT Goals & Objectives**
- Desired Result 3
  - Proactively identify and influence business opportunities through technology innovation and solutions
  - Enable increase in business revenues by 10%
  - Provide Group with X innovations per year
  - Compliance with corporate IT standards at 90%
  - Reuse of IT assets at 90%

- Desired Result 4
  - Mitigate business risk through a prudent approach to adoption of emerging technologies
  - New solution introduction cycle X months
  - Maintain IT policy for all production systems

**Tactics**
- IT Effectiveness Review
- EA Planning & Management
- Business Intelligence
- Service Oriented Enterprise
- Managed Testing

**Assessments**
- Business Scorecard
- Group BU Review
- Architecture Review Board
- IT Ops Review
• Gather Vendor Data for the Cloud Architecture Options

At this point we know the right questions for an "apples to apples" comparison.
Construct architectural structures at the process level to visualize the scenario, then...

Run simulations for the measures that address the business problem using the normalized data from the gathering exercises.
About Scenarios:

• How they work now (required), including
  ▫ Risks
  ▫ Opportunities for Improvement
  ▫ Pain Points

• How they should work (desired state)
• How the scenarios support the desired state
### Scenarios

- Construct Possible Scenarios for Decision Team
- Conduct Impact Analysis on Possible Scenarios

<table>
<thead>
<tr>
<th></th>
<th>Agility/Evolvability</th>
<th>Availability</th>
<th>Complexity</th>
<th>Functionality</th>
<th>Performance</th>
<th>TCO</th>
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<tr>
<td><strong>As-Was</strong></td>
<td></td>
<td>Baseline at 100%</td>
<td>Baseline at 100%</td>
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<tr>
<td><strong>As-Is</strong></td>
<td>TBA</td>
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<tr>
<td></td>
<td></td>
<td>The performance improvement helps availability</td>
<td>The performance improvement makes it less complex</td>
<td>No change</td>
<td>Reduced DB util down from 100% and refresh rate down from 25 seconds</td>
<td>Better overall system results in better cost</td>
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<tr>
<td><strong>Cloud Scenario A</strong></td>
<td>TBA</td>
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<tr>
<td></td>
<td></td>
<td>Orders of magnitude more available</td>
<td>Much less complex with much less coupling</td>
<td>We’ve lost some functions that we had in current system</td>
<td>Order of magnitude better performance</td>
<td>Much better TCO</td>
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<tr>
<td><strong>Cloud Scenario B</strong></td>
<td>TBA</td>
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<td></td>
<td></td>
<td>Slightly less available as slightly more complex</td>
<td>Extra component so slightly more complex</td>
<td>More features in stand-alone but still down on “as-is”</td>
<td>Better load balancing</td>
<td>Extra component so slight worse TCO</td>
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<tr>
<td><strong>Cloud Scenario C</strong></td>
<td>TBA</td>
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<td>Most available due to economies of scale / on-demand solution</td>
<td>Far less complex, it's a “black-box”</td>
<td>More general solution so less functional</td>
<td>Better than as-is but not as good due to overhead of on-demand solution</td>
<td>Much better</td>
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Cloud Scenario A and B vs Current State [Radar Diagram]
Cloud Option Comparisons

Capacity Space Chart

Cloud B

Cloud C
Trade off Analysis

Complexity and Cost are correlated

Better Cost and Availability but worse Performance

Both may be acceptable? We may need to conduct further analysis

Better Performance but worse Cost and Availability

So … Performance v Availability v Complexity/ Cost
• Determine Proper Degree of Cloud Support

Engage Decision Team and Present Suggested Scenario Alternatives
Revisit Success Criteria
Facilitate Risk Mitigation Questions and Build Consensus Around a Single Course of Action

Deliverable: Approved Cloud Configuration with Signoff from Decision Team

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- Better overall solution across the board
- Higher cost of ownership over the long term
- Cloud-based solutions mandate a strategy change
- High levels of collaboration and communication
- galaxy-based collaboration, it’s a 10-year vision
Why this is easier than you think

- You now have the basis to measure cloud / cloud services because the decision metrics become evaluation criteria for promised SLA, etc.
- You have L1 / L2 requirements for transition projects – they were needed for evaluation
- You know where all of the affected people, processes, assets, etc., are located and what needs to be done.
- You already have a good start on your desired processes.
Summary:

- Helped business people make informed business decisions using terms and measurements they consider important (because they defined them).
- ‘Separated the wheat from the chaff” (Kansas term) by demystifying cloud jargon and hype.
- Empowered decisions makers by providing solid alternative scenarios backed by empirical analysis.
- Provided “top cover” for potential scrutiny (due diligence).
- Conducted architecture-based analysis for “apples to apples” comparison between the As-is state and the representations of cloud vendors (more informed decisions and better SLA management).
Cloud concepts may be new, but the proper assessment and integration of new concepts is well vetted. Outsourcing, COTS, ERP, CRM, SOA...all have been “new” concepts at one time.

The objective is to apply mature Analysis techniques to assess change before it happens, to avoid "bad decisions“.

Benefits Of an Analytical Approach:

- Due Diligence for oversight and funding authorities
- Clear understanding of exactly how the organization can benefit from cloud methods.
More information

- David Epperly
  703-941-0001
  depperly@archangelit.com

- Doug Jackson
  816-547-4688
  djackson@2md.com