ROI

iBRIDGE
iBridge Cloud Technologies

BACKGROUND

Public Cloud vs Private Cloud vs Hybrid

IBridge Cloud Technologies, Inc. is a private/hybrid cloud offering with architected onboarding and orchestration that begins at the start of the sales cycle.

Moving to the cloud, away from physical servers that the client can feel, touch, see and control is a remarkable act of faith. The successful translation of all aspects of their organization's IT resources into an architected environment that feels and behaves the exact way or better, while reducing costs is what every cloud company hopes to achieve.

There are four essential elements to a highly available (virtualized environment that feels live at the edge (client interface)). They are network, storage, compute and memory. An additional leg of this essential foursome is data center proximity which falls under network.

- **Network:** In order to "feel" live, all aspects of the network must be architected. In a live environment, proximity to carrier is an absolute must, therefore the type of circuit must be provisioned in a manner that offers the least amount of latency. IBRIDGE has multiple data centers within its cloud environment with access to every major carrier on a layer 2 interface. This ability allows us to delivery packets from the data center environment to the edge within our defined 2-8 milliseconds (the live feel to the client). A lever to open doors to the client is to speak to the latency boundaries of their current WAN infrastructure, MPLS has latency ta

Clouds Are Typically Defined According to Three Types

- **Public clouds:** Also known as a shared cloud, such services are provided "as a service" over the Internet with little or no control over the underlying technology infrastructure. This cloud is appealing to many decision-makers as it reduces complexity and long lead times in testing and deploying new products. It is generally cheaper, too.

- **Private clouds:** Also called an internal cloud or enterprise cloud, this also offers activities and functions "as a service" but is deployed over a company intranet or hosted datacenter. This is private product for a company or organization offering advance security and highly available or fault tolerant solutions not possible in a public cloud. In this scenario, the private cloud owner shares few, if any, resources with other organizations. Hence, multi-tenancy is not an issue.

- **Hybrid clouds:** This is an integrated approach, combining the power of both public and private clouds. Customized rules and policies govern areas such as security and the underlying infrastructure. In this scenario, activities and tasks are allocated to internal or external clouds as required.

Most Common Services

While clouds may be private or public, they are also further differentiated at the service-type level. There are broadly speaking three types of dominant services:

- **Software-as-a-Service (SaaS)** SaaS refers to an end user accessing a remote product or e-commerce service over the Internet or private cross connect from within a hosted data center. These could include an outsourced email service such as in available through Microsoft Office 365 or Pay Per Cloud, or an accounting software as an example.

- **Platform-as-a-Service (PaaS)** PaaS is geared towards developers who wish to deploy applications in the cloud and don't want to get involved with the server infrastructure. Microsoft Azure is just one example of this service.

- **Infrastructure-as-a-Service (IaaS)** The final version, IaaS, allows developers maximum interaction with the underlying server infrastructure including, but not limited to, deploying back-office applications on that remote environment.

Most Established Server Virtualization Technologies

Arguably, the defining moment for virtualization architecture servers occurred when VMware released its first server products in 2001. VMware dominated the market until Xen hypervisors made its first appearance in 2006 followed by Microsoft's Hyper-V in 2008.

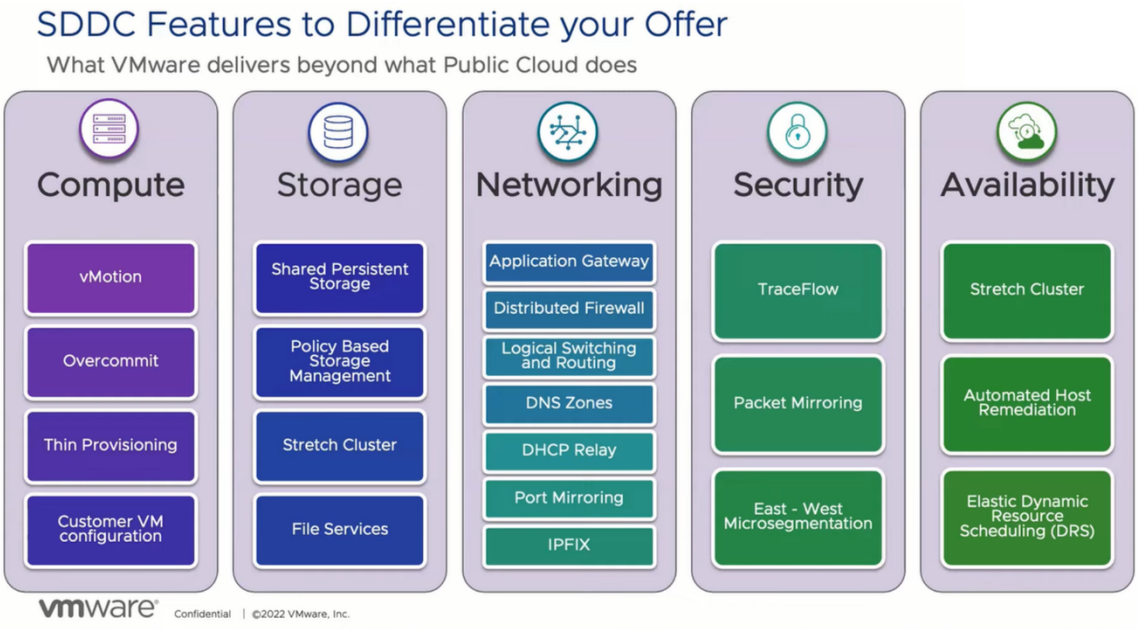
Typically, web hosts such as Virtual Internet use these solutions to virtualize their applications from their x86 Server hardware or software systems thus reducing cost and minimizing wasted resources when delivering the server capacity those applications need.

These virtualization solutions leverage:

- Hypervisors to create virtual machines
- Shared Operating virtualization technologies
- Server virtualization administrative & embedded management

VMware (EMC) and Hyper-V (Microsoft) dominate the cloud landscape.

IBridge Cloud Technologies, Inc. utilizes **VMWare ESX** as our hypervisor.



PLANNING AND KICKOFF

Client Selection

Who is the Client, or a better question why does that client need our service? Pick the client, explore the backstory of that client, and approach the client with meaningful proposition that will improve the efficiencies of their infrastructure, increase their speed and reduce the overhead they are currently paying.

Team Selection

Who in the IBRIDGE team will specifically be assigned to the client.

Sales Lead

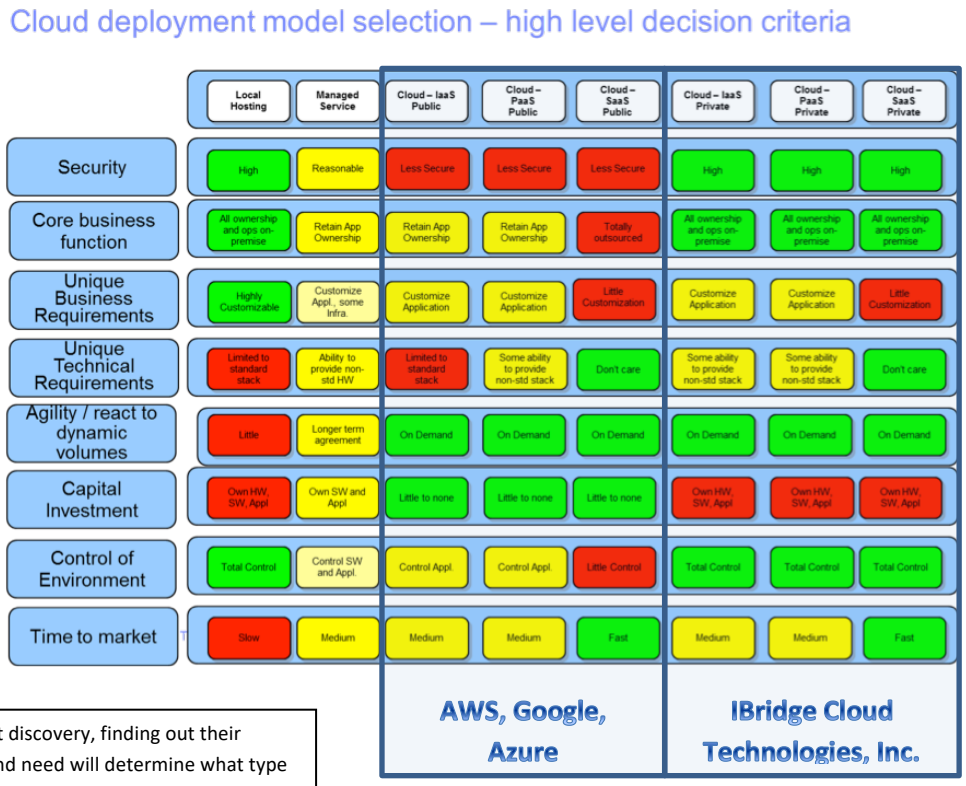
Sales lead is the initial spearhead to the client, he/she initiates client into the onboarding process by determining:

- **Need**: Does the client have an immediate need to offset some of their current infrastructure into a hosted cloud environment, do they have an existing plan, who is the plans architect, are they aware of IBRIDGE and this specific discussion, what phase is the plan in, who are the incumbents, who is the carrier, what is the design of their network, how many locations, how many employees…(see attached questionnaire)

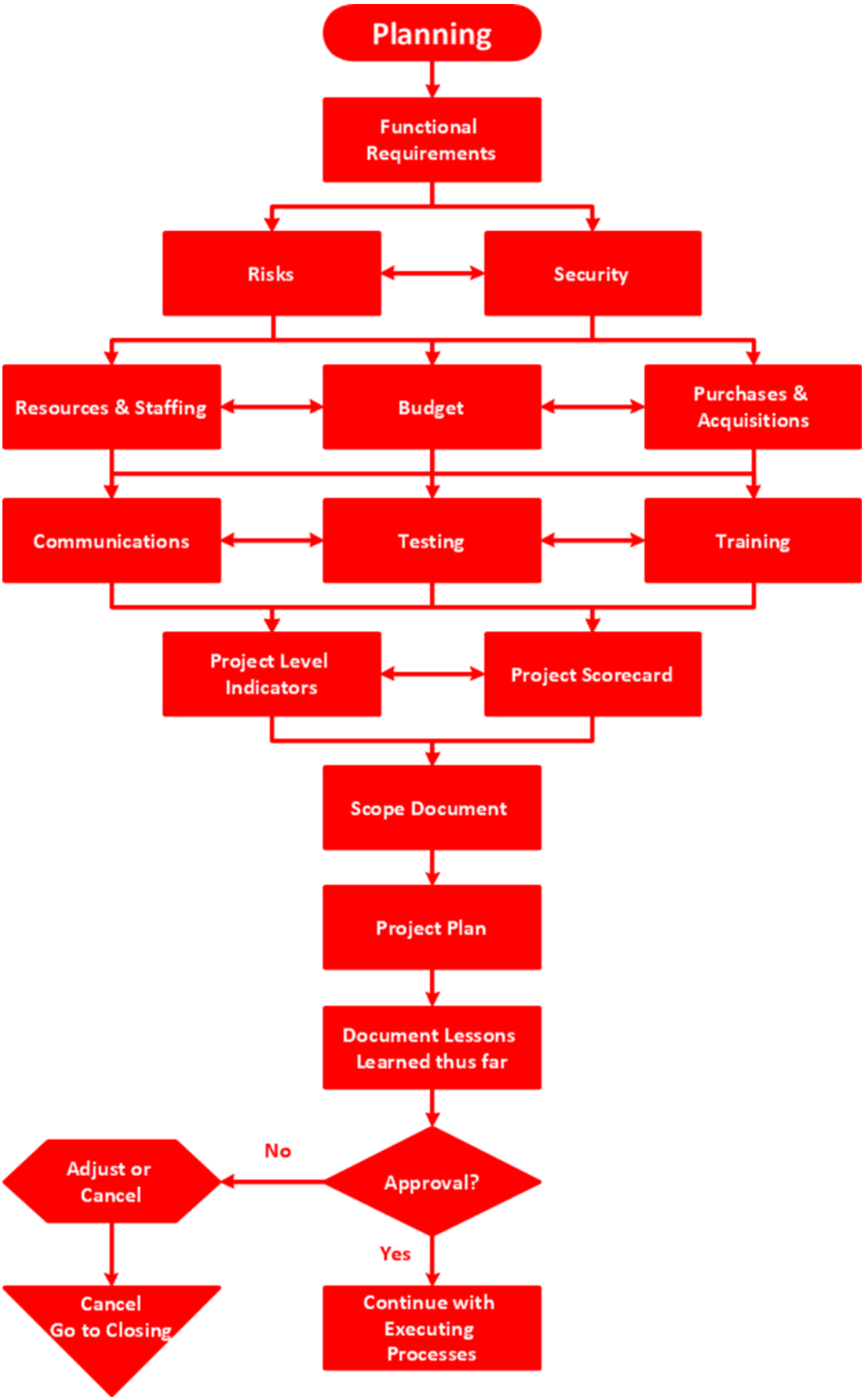
- **Budget**: This process does not move forward unless a tangible savings and ROI can be shown within the existing budget or the client has budget approved to make transition or test current architecture into hosted cloud solution

- **Champion**: who in the organization is the champion of improved technology, unified systems, cloud, do they have the authority or platform to recommend or implement change? Where are they in that cycle? How can we assist in empowering them to make changes? (Security, Savings, IT Continuity, Shared Platform, Enhanced Performance, Flexible Workspace…) Can we take them on a tour? (RDC, Equinix, NTT, Switchnap…)

- **Change**: Change in our world is a good thing. If a client has an acquisition, forms a sister/partner company, extends their world in any way, we should be on their front step offering to consult on the change planned and implement the new environment into a cloud offering that they can see.



Planning a client discovery, finding out their requirements and need will determine what type of comfort they will have and where their cloud should reside. Security issues, such as compliances SARBOX, HIPAA, PCI etc…determine which data centers have the appropriate measure and what type of protocols should be followed.


Planning
Functional Requirements
Risks
Security
Resources & Staffing
Budget
Purchases & Acquisitions
Communications
Testing
Training
Project Level Indicators
Project Scorecard
Scope Document
Project Plan
Document Lessons Learned thus far
Approval?
No
Adjust or Cancel
Cancel Go to Closing
Yes
Continue with Executing Processes

Sales Engineer

As the Sales person qualifies the opportunity and has the discussion with the Channel Manager, a Sales Engineer will be assigned to the opportunity. The sales engineer will use an audit tool (RV Tools, PRTG) to create the asset need for the sales lead. He does that by determining the following:

1. Do they own their own equipment?
    a. Where is it?
    b. What does it do?
    c. How is it connected to the organization?
    d. Who does it serve?
    e. How does it serve it?
    f. What is the latency?
    g. What are their refresh cycles?
    h. Does it run virtual machines?
    i. What hypervisor platform does it use? (see questionnaire)

System Architect

The systems architect takes the information gleaned from the sales engineer to create the following documents:

a. Project Brief
    i. Budget
    ii. Bill of materials
    iii. Time line
    iv. Labor Scope
    v. Project commencement and recommendations
    vi. Drawings:
        1. WAN
        2. Virtualization Schema
        3. Data center profiles
        4. Logical diagram

Assess Client Solution Architecture

Each client has a unique proposition, footprint and current architecture that must be transposed into our cloud and mimic the functional requirements that must be present for fully functional environments.

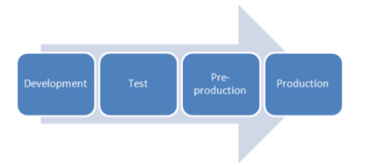
The questionnaire below will help to hone in on the functional requirements of the client.

Often a client needs to be slowly integrated into a fully dependent cloud infrastructure, some gradual steps are:

- Disaster Recovery
- WAN Optimization
- Tertiary and Secondary storage
- On demand services (SAAS)

Document Client Operational Requirements

Cloud environment are typically broken into four general requirements:



- **Production** (live presentation of environment to end users)
- **Development** (works in development that have not been tested and verified)
- **Test** (Developed works that need to be stressed and tweaked prior to presentation in pre-production)
- **Pre-Production** (tested developments are presented in a QA environment to a select group to test, verify and improve prior to presentation in Production)

There are critical requirements in each business that must reside live. These environments are built and supported as a "Production Environment".

Production environment is a term used mostly by developers to describe the setting where software and other products are actually put into operation for their intended uses by end users. A production environment can be thought of as a real-time setting where programs are run and hardware setups are installed and relied on for organization or commercial daily operations.

All production environment solutions must be carefully examined to determine failover requirements, cost structure, backup and recovery, latency boundaries. An example of a production environment application is Virtual Desktop. The virtual machine within the data center is presenting to the edge (client-side location) an image of what is happening inside the compute, network, storage and memory of the architected instance of a clients Virtual Desktop. The mouse and keyboard are sending signals to the VM in the data center to make changes to the image presented on client monitor, the VDI is interacting and extracting from the virtualized servers of the client, all that it needs to present the image in real time. The look and feel of the mouse, keyboard, image and data center interaction must all be in virtual "real time" in order for the end user to have a positive experience as a cloud user.

The client financially benefits by reduction of hardware costs, local IT support and desks within their environment and enables the worker to be anywhere within the environment and have the identical experience.

Applications that are not ready but are being developed reside in the development category. Development allows for a mock presentation of the developers application in an environment that is isolated from the production environment.

Once an application is developed and ready for prime time it can move to the test environment, the test environment test the application for bugs and glitches and allows the developer to mimic the production.

All applications fall within these buckets, they must be discovered, defined and categorized and put into a migration plan.

Develop Initial Project Plan

Upon conclusion of the discovery process (that is the sales lead, sales engineer and solutions architect have successfully gleaned from the client all the necessary information required to produce an initial draft plan for presentation back to the client) the initial plan will be discussed with the client, the following should be inclusive of the elements in that presentation.

PROJECT DEFINITION

Document As-Is and To-be Solutions

Clients will have a current architecture, all elements of the new solution should be defined with the clear indications of benefit for the client (i.e. cost, speed, ease of use, recovery, mobility, collaboration etc.).

As-is (current)	To-be (future)
On premise server (out of warranty, maintenance nightmare, EOL, IT support dependent, electrical and AC bills)	Virtualized Server (data center defined, latency boundaries,
Desktop	VDI
WAN	Architected SDWAN pointed to latency defined DC
Failover and Backup	Client defined backup RTO and RPO, defined Uptime
Lack of mobility	Environment accessible from Secured VPN or virtualized office space within any branch office or remote user
Hardware Lock	Virtualized instance providing Storage, Memory, Compute and Network, scalable on demand.

Document Flows and Processes

(to be defined by Sales Engineer and Solution Architect)

- **Determine Key Steps for Conversion**
- **Define Software Components**
- **Client Review and Approval/Contract Signature**
- **System Implementation**
- **Admin Support and Billing**

INTERACTIVE DEVELOPMENT

- Define Project Charter
- Determine Resource Requirements
- Secure Client Approval
- Define Initial Sprint
- Develop, Test, Implement
- Release to Production
- Process Profile Setup

FILE CONVERSION

Define Data Architecture

- Define Data Conversion Process
- Secure Client Approval
- Define Report and Procedures
- Design Conversion Process
- Secure Client Approval

TESTING

- Unit Testing
- System Integration Testing
- Testing Scenarios and Procedures
- End to End Testing
- User Acceptance Testing
- Infrastructure Testing

CLIENT TRAINING

- Define Training Program
- Define Scheduling and Resources
- Classroom Training
- Enable Train the trainer's approach
- Determine Training Effectiveness

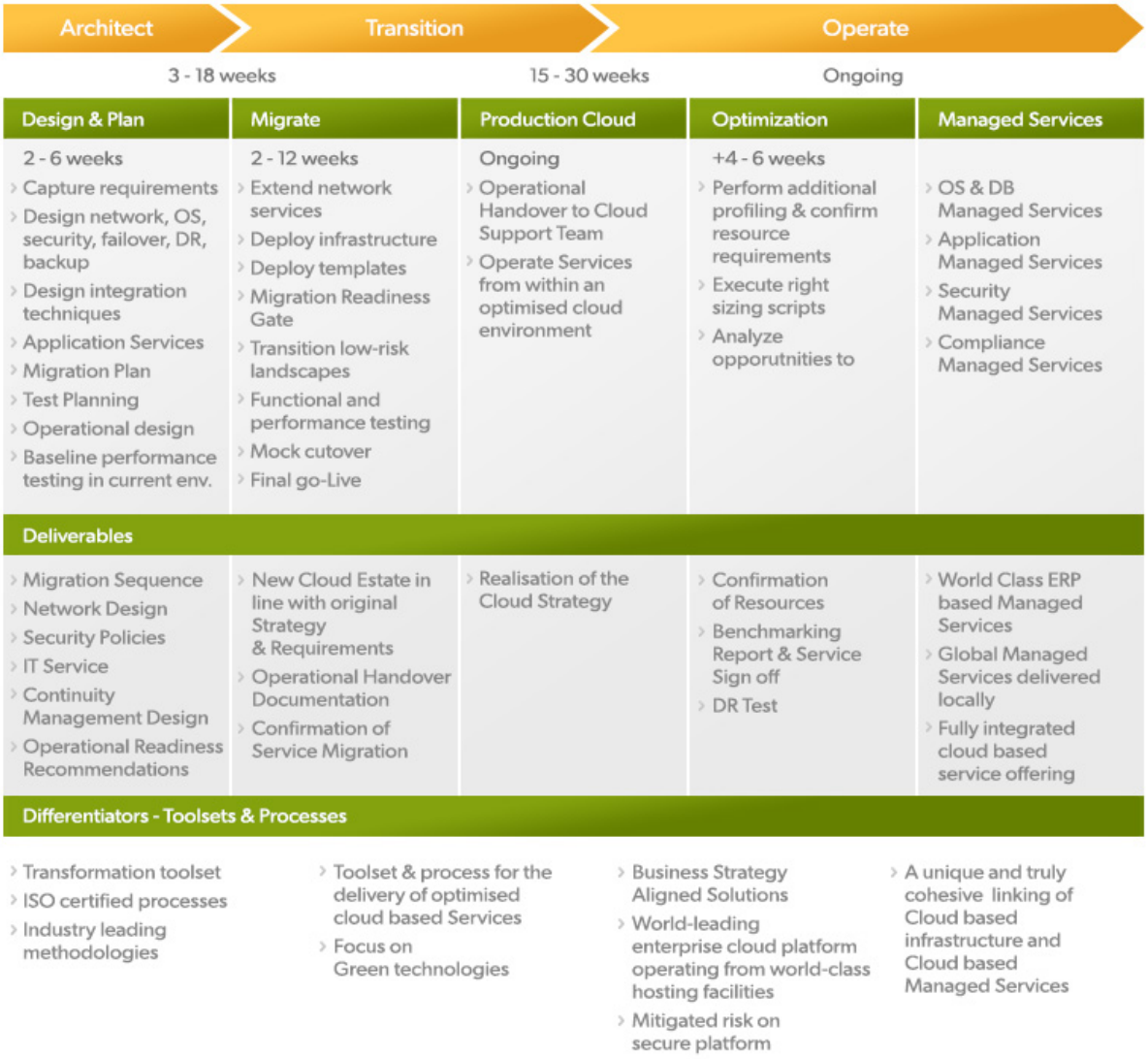
MOCK CONVERSION

- Perform "Dry Run" Conversion"
- Initiate "Production Processing"
- Simulate Daily Throughput
- User Acceptance Testing
- Post Mock Conversion-Review/Identify

LIVE CONVERSION

- Develop/Define Final Procedure
- Client and Specialist Review
- Define Additional Coverage Requirements
- Perform Data Conversion
- Production Processing

Onboarding - Full Cloud Transformation Programme



Pain Points	
What are the IT infrastructure issues that cause frustration, undue effort or concern?	
Objectives	
What are drivers behind investigating a vDC initiative?	
What objectives do you hope to accomplish with vDC?	

Existing ESX Environment – If Applicable	
How many ESX hosts do you run today & which ESX version(s)? What type of host & what CPU/memory configuration?	
How many VMs do you run?	
What are the obstacles, if any, to completing virtualization of your data center?	
IT Projects	
Any projects on the horizon (i.e. application deployment, O/S migration, etc.) that you feel could be impacted by virtualization?	
Backup Environment	
What kind of backup solution to you have in place for physical servers? For VMs?	
Are you finding it difficult to meet backup windows?	
Are you a 24 X 7 shop?	
Network Environment	
Do you utilize VLANs?	
Do you have any network issues?	
Operational Environment	
Do you have regularly scheduled maintenance windows? If so, how often & at what time?	
How much planned downtime per server per year for server maintenance?	
High-Availability Environment	
Do you have a clustering solution in place today? If so, what kind and how many server?	
Test/Development Environment – if Applicable	
Do you have a formal test/dev environment in place today?	
How many physical servers, if any, do you have dedicated to testing?	
Do you spend a lot of time rebuilding test servers?	
How do you handle patch roll-outs (for servers)?	
Voice Environment	
What type of phone system is in place today?	
If Cisco UC, how many MCS Servers? Any near-term expansion plans?	

Colocation Inputs – If Applicable *(Objective is to calculate cost of space/power per physical server)*	
If you host at a colo today, what is your mo. cost per rack?	
Monthly cross connect cost per rack (if any)	
What is your mo. cost per circuit?	
# of Circuits per rack	
How many servers do you get per rack?	
Total # of racks used? *(Informational checking purposes)*	
Any other relevant costs?	
Physical Server Inputs *(Objective is to calculate cost of space/power per physical server)*	
How many physical servers can we virtualize? *(production & test)*	
Cost to power & cool each server per month?	
Ave. cost per server? *(inc. shipping, tax, set-up, power whips, cabling, SFPs, core & dist switch ports, generator & UPS slices & HBAs)*	
Server refresh period (in months)?	
Number of new servers purchased each year on average?	
# of Servers on Maint. After 3-yr. Mfg. warranty expires?	
Any other relevant costs?	
Microsoft Licensing Environment	
How many licenses of MS Windows Server Std do you have?	
What is your ave. cost per MS Windows Server Std?	
How many licenses of MS Windows Enterprise do you have?	
Do you have SA on your MS Windows Enterprise licenses?	
What is your ave. cost per MS Windows Enterprise?	
How many licenses of MS Windows Data Center Edition do you have?	
What is your ave. cost per MS Windows Server Data Center Edition?	
How many licenses of SQL Server Standard do you have?	

What is your ave. cost of SQL Server Standard?	
How many licenses of SQL Server Enterprise do you have?	
What is your ave. cost of SQL Server Enterprise?	
Copies of any other significant MS Server products (e.g. BizTalk, other versions of Windows Server, etc.)	
What is your ave. cost of above server item?	
Storage Environment	
How much total DAS do you utilize today?	
Do you have a Fiber Channel or iSCSI SAN in place? If so, what brand and how much storage?	
If you have a SAN, how many servers connect to it today?	
What percentage of new physical servers for new applications are likely to connect to the SAN?	
Do you have a cost per GB for SAN storage, and if so, how much?	
Estimate of average GB per VM?	
Disaster Recovery Environment	
Do you have an x86 server DR plan in place today?	
If not, is there a DR initiative planned?	
If so, how many servers are available there for failover of production machines?	
Do you have a cost associated with the DR site and if so, how much?	
Other relevant DR information such as SAN, replication techniques utilized, etc.?	
Miscellaneous	
Any planned data center expenditures (i.e. new PDU, UPS, A/C Unit, expansion, etc.) and if so, how much is budgeted?	
Any other expenses which should be included as part of the ROI?	

ROI- Business Case

Project Name:			
Date:		**Release:**	Draft/Final
Author:			
Owner:			
Client:			
Document Number:			

Note: This document is only valid on the day it was printed

Revision History

Date of next revision:

Revision Date	Previous Revision Date	Summary of Changes	Changes Marked

---

Approvals

This document requires the following approvals. A signed copy should be placed in the project files.

Name	Signature	Title	Date of Issue	Version

Distribution

This document has been distributed to:

Name	Title	Date of Issue	Version

ONBOARDING-SALES TO HANDOFF AND BEYOND

OVERVIEW

Purpose

A Business Case is used to document the justification for the undertaking of a project, based on the estimated costs (of development, implementation and incremental ongoing operations and maintenance costs) against the anticipated benefits to be gained and offset by any associated risks.

The outline Business Case is developed in the Starting up a Project process and refined by the Initiating a Project process. The Directing a Project process covers the approval and re-affirmation of the Business Case.

The Business Case is used by the Controlling a Stage process when assessing impacts of issues and risks. It is reviewed and updated at the end of each management stage by the Managing a Stage Boundary process, and at the end of the project by the Closing a Project process.

Contents

The Business Case should cover the following topics.

Executive Summary

Reasons

Business Options

Expected Benefits

Expected Dis-benefits (if any)

Timescale

Costs

Investment Appraisal

Major Risks

Advice

The Business Case is derived from the: Project mandate and Project Brief – reasons; Project Plan - costs and timescales; The Senior User(s) - expected benefits; The Executive - value for money; Risk Register and Issue Register.

The Business Case can take a number of formats, including: Document, spreadsheet or presentation slides; Entry in a project management tool.

The following quality criteria should be observed:

- *The reasons for the project must be consistent with the corporate or program strategy*
- *The Project Plan and Business Case must be aligned*
- *The benefits should be clearly identified and justified*
- *It should be clear how the benefits will be realized*
- *It should be clear what will define a successful outcome*
- *It should be clear what the preferred business option is, and why*
- *Where external procurement is required, it should be clear what the preferred sourcing option is, and why*
- *It should be clear how any necessary funding will be obtained*
- *The Business Case includes non-financial, as well as financial, criteria*
- *The Business Case includes operations and maintenance costs and risks, as well as project costs and risks*
- *The Business Case conforms to organizational accounting standards (e.g. break-even analysis and cash flow conventions)*
- *The major risks faced by the project are explicitly stated, together with any proposed responses.*

EXECUTIVE SUMMARY

(Highlight the key points in the Business Case, which should include important benefits and the return on investment (ROI))

REASONS

(Defines the reasons for undertaking the project and explains how the project will enable the achievement of corporate strategies and objectives)

BUSINESS OPTIONS

(Analysis and reasoned recommendation for the base business options of: do nothing, do the minimal or do something)

EXPECTED BENEFITS

(The benefits that the project will deliver expressed in measurable terms against the situation as it exists prior to the project. Benefits should be both qualitative and quantitative. They should be aligned to corporate or programme benefits. Tolerances
should be set for each benefit and for the aggregated benefit. Any benefits realization requirements should be stated)

EXPECTED DIS-BENEFITS

(Outcomes perceived as negative by one or more stakeholders. Dis-benefits are actual consequences of an activity whereas, by definition, a risk has some uncertainty about whether it will materialize. For example, a decision to merge two elements of an organization onto a new site may have benefits (e.g. better joint working), costs (e.g. expanding one of the two sites) and dis-benefits (e.g. drop in productivity during the merger). Dis-benefits need to be valued and incorporated into the investment appraisal)

TIMESCALE

(The period over which the project will run (summary of the Project Plan) and the period over which the benefits will be realized. This information is subsequently used to help timing decisions when planning (Project Plan, Stage Plan and Benefits Review Plan))

COSTS

(A summary of the project costs (taken from the Project Plan), the ongoing operations and maintenance costs and their funding arrangements)

INVESTMENT APPRAISAL

(Compares the aggregated benefits and dis-benefits to the project costs (extracted from the Project Plan) and ongoing incremental operations and maintenance costs. The analysis may use techniques such as cash flow statement, ROI, net present value, internal rate of return and payback period. The objective is to be able to define the value of a project as an investment. The investment appraisal should address how the project will be funded)

MAJOR RISKS

(Gives a summary of the key risks associated with the project together with the likely impact and plans should they occur).