Infrastructure Support Sourcing Strategy

Outsourcing ***infrastructure support*** can be a long and complex process. As such, this document represents a starting point for turning over any significant infrastructure support to a supplier.

This document focuses on the tasks associated with supporting IT infrastructure. As such, it touches on aspects to be considered when considering services such as:

- **Infrastructure as a Service (IaaS)**, which replaces the organization's data center, servers, and storage with cloud equivalents; in this case the client retains systems management functions
- **Platform as a Service (PaaS)**, essentially **IaaS** adding operating system and systems management
- **Co-location (Co-lo)**, which eliminates the organization's data center and transfers its equipment assets to a secure, shared, managed facility; there are often options for leveraging local connectivity to other services such as AWS, Azure, Google, and others. *This is our preferred option for hybrid environments*
- *Transfer of infrastructure assets to a supplier's facility*, whether the asset itself or a swap negotiated with the supplier or original equipment manufacturer; swaps are most effective for leased assets

"Client," below, refers to the client enterprise, that is, your company. *We have included additional explanatory guidance as appropriate.*

Principal Goals

This section outlines the primary drivers of our strategy and specific supporting actions.

- **Efficiency** – *Cost effectiveness and cost control*

- Leverage supplier economies of scale
- Reduce the cost of IT Infrastructure and back-office system operations while maintaining or improving current service levels
- Enhance business integration and agility

- **Enhancement** – *Processes to improve quality*

- Leverage supplier's mature and proprietary value-added infrastructure management toolset to reduce incident response time and downtime
- Enable business units to increase focus on customers and sales by creating continuous improvement and high levels of assurance in the performance of IT infrastructure and back-office system operations

- **Transformation** – *Processes to expand features and shorten time to market*

- Enable business units to become more innovative and responsive to the changing market dynamics through the provision of more agile and responsive infrastructure and back-office system operations

Phases

This section documents, at a high level, phases and activities as the organization transitions to supplier support of its infrastructure.

Discovery

- **Asset inventory**
  - Inventory current infrastructure (hardware, software, network,...) landscape
  - Inventory and document deployment topology of infrastructure management tools currently in use
  - Inventory and document deployment topology of IM/PM/CM services and solutions, i.e., incident management, problem management, change management/requests
- **Demand management**
  - Evaluate and document current and anticipated short- to middle term infrastructure needs
  - Evaluate and document current and desired service level requirements and expectations for infrastructure tasks along with the current cost of operations
  - Benchmark costs, staffing ratios, and productivity against industry norms
  - Leverage the subject matter expertise of internal infrastructure specialists to flesh out strategies and ensure clear objectives and performance expectations; *transitioning infrastructure support to a supplier does not eliminate the need for client management, rather, key support managers should be groomed to become service managers in the transitioned environment—these individuals, that is, those who have a personal stake in the post-transitioned environment, should be the SMEs consulted to the degree possible*
- **Define "to-be"**
  - What are the strategic operations to be retained, versus those which can be outsourced?
  - Are there operational or supervisory staff who should be transitioned to the supplier?
  - What is the full extent of financial impact? OpEx versus CapEx trade-offs? Cost of layoffs and buyouts?
  - What is the target operating model (TOM) for each area of technology responsibility, including data center, help desk, network, field service,...

Transition

- **Tactical**
  - Identify and implement tactical consolidation initiatives that would bring in immediate benefits; suppliers will typically look to work with the client to consolidate physical infrastructure in order to reduce operational complexity and cost
  - Initiate outsourcing for tactical initiatives identified to accrue incremental cost benefits following a progression of support levels, transitioning more complex support levels over time to manage risk and build momentum based on prior successes:
    - *Level 1 – Basic Infrastructure Tasks*
    - *Level 2 – Basic Applications Domain Knowledge*
    - *Level 3 – Advanced Applications Domain Knowledge*
  - Define service level expectations for these outsourcing initiatives

- **Strategic**
  - Partner with an expert infrastructure services supplier for defining key strategic initiatives to improve IT: processes, infrastructure consolidation, continuous improvement and longer term benefits. Utilize cost savings achieved from tactical initiatives to fund subsequent strategic initiatives. For example:
    - Evaluate Infrastructure as a Service, Platform as a Service, and cloud solution suppliers with a view toward leveraging these options for future needs
  - Leverage relationships with strategic supplier partners to consolidate current infrastructure outsourcing engagements and solicit their investment to develop new opportunities

Operation

- Build **Level 1**, **Level 2**, and **Level 3** support; basic levels of management include:
  - *Reporting* – Reactive reporting of incidents and occurrences
  - *Monitoring* – Active analysis to spot trends and timely address if not avoid incidents
  - *Validation* – Proactive management to avoid incidents based on knowledge gained from reporting and monitoring
- Evaluate and work towards improving quality of service for cost benefits year on year

A goal of IT infrastructure consolidation and outsourcing strategy should be to improve IT service management processes towards more predictable outcomes by drawing upon the relevant best practices from the IT Infrastructure Library (ITIL).

As cloud computing continues to change how IT services are delivered, it will be increasingly important to emphasize the need for strong service management and governance frameworks. To achieve this clients must leverage the expertise and experience of strategic supplier partners to assist in implementing IT service management (ITSM) frameworks across their infrastructure needs.

Levels of infrastructure support

This list is not exhaustive. Insure that all activities "have a home" either with the client or supplier, with clarity in lines of reporting and delineation of responsibilities. Scope is also affected to the degree services are bundled into external services, such as *Microsoft Office 365* or *Google for Business*.

Level 1 – Basic infrastructure tasks ("Boots on ground")

Operating Systems Management	Desktop	Storage Management
○ Installation ○ Patching ○ Hardening ○ Monitoring	○ Telephony/Voice/VOIP ○ Virtualization ○ Software installation ○ Password resets ○ Anti-virus	○ Configuration ○ Backup ○ Restore ○ Monitoring

Third Party Supplier Management	Network
○ Issue escalation to OEM ○ Hardware provisioning	○ Installation ○ Patching ○ Monitoring ○ Configuration

Includes responsibility for physical asset security

- The tasks at the lowest level are concerned with the provisioning and management of hardware and related operating systems, other systems software and tools that comprise the base of deployed solutions.
- These activities are common across companies and required commodity skills to execute.
- These tasks require the least amount of domain knowledge and are relatively easily transitioned and outsourced to competent remote infrastructure management service providers.
- While most of the tasks can be executed from remote locations including off-shore, physical presence is required near the data center for on-site support if and when required. *Off-shore suppliers often have local or regional geographic partners to whom they can subcontract these activities.*
- Supplier staff attrition is not a significant risk as the suppliers are able to acquire or train resources with the necessary skills relatively quickly with little or no impact on service levels.
- An additional dimension to explore for the hardware aspect here is the mix of in-house versus hybrid versus cloud infrastructure. We must be aware of the data security aspects and the maturity of the cloud computing services supplier.
- Product and applications development groups typically require multiple environments for development, quality assurance (QA), system and integration testing, user acceptance testing (UAT), performance tuning, and pre-production. Development and QA are constants, whereas the others can usually be environments which are put up and taken down as needed, regardless of development methodologies in use. Cloud solutions are the most cost-effective in such cases. Having the supplier handle this provisioning and setup (that is, PaaS) frees client staff from expending effort to stand up and configure these environments.

Level 2 – Basic shared services domain knowledge and tasks

DB Management	Web/Application Servers
○ Tuning ○ Support ○ Monitoring ○ Backup/Restore	○ Load balancing ○ DNS settings ○ Monitoring
Mail Services	**Enterprise Service Bus**
○ E-mail server management ○ Load monitoring ○ Third party integration for spam	○ Management of message version updates ○ Configuration and maintenance

Includes responsibility for software asset security

- The tasks at this level involve the installation and maintenance of key software infrastructure that is the bedrock of an organization's business systems and application stack.
- These are typically software components that are common within the industry; however, they are configured and used within each business in specific ways which require understanding of the business domain in order to provide effective support.
- These skills are still commonly available within the services industry; however, they tend to be more specialized and more expensive.
- Transitioning activities at this level takes more time and planning.
- Supplier staff attrition is relatively higher risk than **Level 1** tasks as the suppliers may not be able to acquire or train resources with the necessary skills as quickly.

Level 3 – Application domain knowledge, business and customer-facing application support tasks

Application Monitoring	L2 and L3 Support
○ Performance analysis ○ Monitoring ○ Application tuning support ○ Downtime planning	○ Ticket resolution ○ End customer interaction ○ Support during disaster recovery
Mail Services	**Enterprise Service Bus**
○ Managing application environments ○ Deployment automation ○ Release support	○ Performance scripts and testing ○ Product performance engineering

Includes responsibility for application security

- The tasks at this level are often application specific and require deep application and domain knowledge. Teams executing these tasks often need to work closely with the teams managing the applications development work.
- While the skills on the tools used are commonly available, the knowledge of where and how to use these tools in the specific application environments requires application domain knowledge.
- Transitioning activities at this level requires significant time for knowledge transfer and close supervision during the transition period.
- Supplier staff attrition at this level is a significant risk as the ramp up time of supplier resources is substantial and there would be significant impact on service levels were high levels of attrition to occur without the necessary mechanisms to mitigate this such as shadow resources.

Creating the path to outsourcing

The following bullet items set out an approach and actions to undertake while examining and planning for potential infrastructure support outsourcing.

- Engage a supplier experienced with executing infrastructure management to help develop an actionable outsourcing plan.
- *There is a long history of enterprises outsourcing their entire infrastructure support. Some create stable long-term relationships beneficial to both client and supplier, others fail spectacularly*

though never portrayed as such during the "back-sourcing" process. The key to longevity is to insure from the outset a relationship which benefits both client and supplier.

Client benefits targeted through complete outsourcing include:

- Established processes, templates and tools to document environment, source improvement opportunities, enable self funding transformation and enable ITIL compliant processes.
- Committed savings as part of business plan in the range of 20-30% of base cost.
- Continuous improvement is built into the model.
- Implementation timeframes within six months of contract signing.
- Front-loaded business savings occurring within three years. *Our experience is that front-loading client savings benefit shareholders and inflate senior management bonuses while boxing suppliers into an untenable financial position if the client fails to meet all commitments in a timely manner which are required for the supplier to earn back their up-front investment. If a contract features front-loaded savings, then it must also protect the supplier and include financial client penalties for failing to meet contractual commitments. Beware front-loaded savings whose primary purpose is to "buy the business." Failure is a distinct possibility.*

- Regardless of in whole or in part, infrastructure outsourcing can generate added value beyond labor/rate arbitrage by targeting efficiencies of operation and scale which suppliers can offer in support of shared services.
  - Supplier's ecosystem partners can be leveraged to gain broader economies of scale in areas including:
    - Telecom expense management for wire line, VOIP, and wireless
    - Hardware and software purchases, and maintenance contracts
    - Disaster recovery
    - Managed print services
  - Suppliers can support innovative business models such as:
    - Infrastructure on demand (IaaS) applied in support of fixed duration project needs
    - SaaS applied to tool usage in areas such as problem ticketing, service ticketing, customer service to eliminate CapEx
    - "Zero cost" virtualization, that is, convert infrastructure and therefore associated expense from CapEx to OpEx

First steps

The most important aspect of any IT outsourcing arrangement is the quality of the client-supplier relationship. Ideally, this can be assessed empirically by identifying an internal business or service committed to outsourcing and "running" their outsourcing as a supplier-guided pilot, that is, as a proof of concept (POC). This facilitates a full and intimate view of the supplier's tools, methods, and service management.

We strongly advocate for the POC approach whenever business lines or the enterprise as a whole are considering transitioning internal services to SaaS.

Following is a representative list of activities to conduct and questions to answer in preparation for potential outsourcing of infrastructure support.

- Begin collecting current metrics supporting infrastructure service level expectations
- Establish a global topology of the current infrastructure landscape:
  - who supports?
  - locations?
  - services and service levels offered?

  Use a common asset management toolkit.
- Establish a global topography of tools deployed across the enterprise in support of Infrastructure management:
  - Seek to establish common tools and consolidate licensing enterprise wide to leverage scale.
  - Explore SaaS options.
- Seek additional support from preferred suppliers to understand the possibilities and opportunities including:
  - Do any of your preferred suppliers specialize in infrastructure and infrastructure support outsourcing? If so, request case studies of outsourcing arrangement similar in size and structure to that contemplated. Look for lessons learned to be applied to the current outsourcing effort.
  - (If so) what additional services do your preferred suppliers offer through third party partners? For example, they might offer complete asset migration but into data center space they contract for from a co-location supplier. *Any outsourcing of infrastructure which involves the relocation of data processing and storage assets must take privacy laws and regulations into account.*
- Clarify management's preference for spending--OpEx service model versus CapEx and buy versus build—to understand the potential value proposition of:
  - IaaS, PaaS, and other cloud solutions to avoid CapEx
  - SaaS solutions to avoid CapEx, replacing bespoke solutions or licensed software with a subscription model

Examining these will get you off to a good start, appreciating there is more work to come. Once basic fact and objectives gathering is completed, specific plans can then begin to be crafted with suppliers.