24x7

**Application Maintenance and Support
An ITC Infotech Service Overview**

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INTRODUCTION

Many organizations in the past have implemented packaged solutions or custom-developed applications, and hybrid mixes of both kinds, without due diligence and requisite planning for how they will maintain and enhance the application across time. This trend, albeit in a reduced intensity, carries forward to the present. Consequently, maintenance of applications that are spread across multiple platforms from legacy to client server systems to more recent multi-tier or browser-based architectures has continued to be a key, and often neglected, challenge for many global enterprises.

Application Management Services (AMS) provide ongoing functional and technical support for a company's application maintenance needs. A service provider's expertise in this area is determined by how well, and how consistently, it manages to stabilize, optimize and extend a client's application so that its functionality continues to meet the client's growing and changing needs.

Application support requires more than just technical knowledge. AMS delivery teams must combine excellent customer service skills, SLA-based service management expertise, and critical business domain and functional knowledge along with relevant platform and technology skills. This combined skill mix enables rapid problem resolution with increased business performance.

Due to the specialized skills required for effective AMS and the sustained high costs involved in maintaining in-house teams for the same, this area, for most organizations, is perfectly positioned to be outsourced to the "right" offshore service provider – a route that not only ensures consistent performance levels of existing applications, but increasing returns on application assets and sustained operational savings.

This places on center-stage the criticality of the "right" choice of an AMS provider.

ITC Infotech, with its extensive global-scale AMS experience, and proven CMM level 5 processes, is one of India's best outsourced IT services providers for this job. The following sections elaborate on ITC Infotech's AMS approach, methodology and credentials.

APPLICATION MAINTENANCE: TYPES

Application Maintenance Services can be of various types, and various organizations choose to classify AMS in various different ways. At ITC Infotech, we look at two broad classes of AMS based on the nature of the service need, each of which is further composed of two sub-classes:

- **AMS for Application Modifications (or Fixes) –** These are services provided on demand with an aim to 'fix' application functionality and performance. In turn, such service requests may originate because of either of two causes:

    o *Corrective Needs:* When certain functional or technical glitches are identified in an application, or an application ecosystem, the AMS provider team needs to quickly narrow down and isolate the problem and rectify the same.

o *Adaptive Needs:* The platform OS, or underlying database, or hardware, or other IT
o systems on which an application sub-system is dependant on changes, there is a need to correspondingly modify certain aspects of the dependant application(s).

- **AMS for Application Enhancements –** These are services provided on demand with an aim to improve application functionality and performance. In turn, such service requests may originate because of either of two causes:

  o *Improvement Needs:* Based on user feedback, over time, certain improvement areas may be identified for an application, or an application ecosystem. The AMS provider team needs to provide services to build the requisite features/functionalities into the application(s).

  o *Preventive Needs*: Even without any active improvement area identification from the user community, the forward-looking systems analysts need to identify mechanisms to ensure better performance, easier maintainability and higher reliability of critical applications. The AMS provider needs to collaborate in such initiatives, and implement final recommendations for the same.

NOTE: ITC Infotech treats all large-scale enhancements as separate projects, rather than as part of standard AMS scope.

We believe that the real value of AMS lies in how consistently and how quickly effective application modifications and enhancements are delivered - factors that directly impact system efficiency and end-user satisfaction. This underlines why ITC Infotech places critical importance on Service Level Agreements (SLAs), and prides itself on its SLA performances across its many global AMS engagements.

SERVICE LEVEL AGREEMENTS
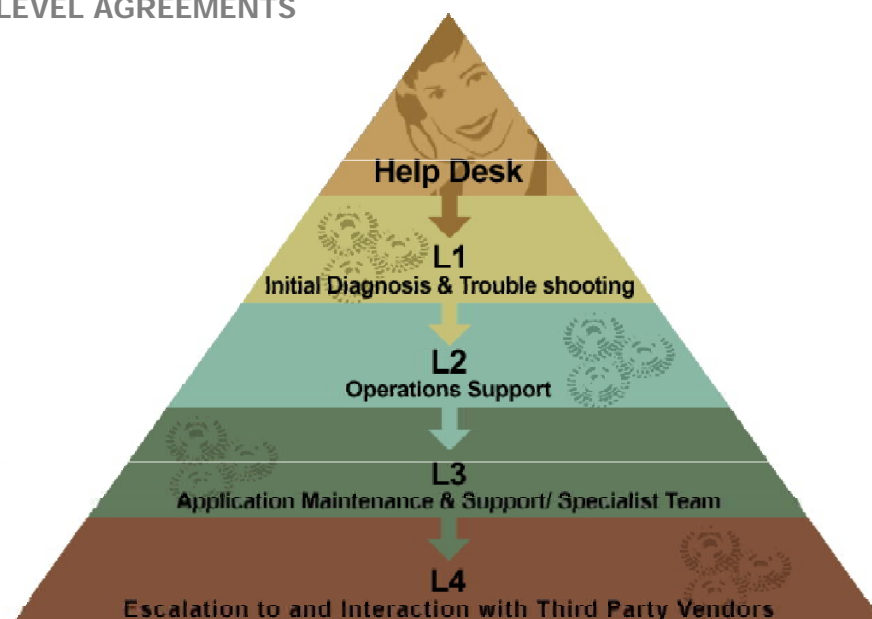
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A company's success today is integrally linked with its information technology (IT) services. Any disruptions or degradations in IT service can cause serious, even catastrophic, damage to business. Considering the complexity and dynamic nature of today's enterprise applications and networks, it can be quite a challenge to achieve the high levels of service users require—and demand. Service Level Agreement, abbreviated SLA, is a formal contract between an AMS provider and the AMS service-consuming client that stipulates and commits the AMS provider to a required level of service. An SLA typically defines a guaranteed level of system performance in terms of downtime or uptime, a specified level of customer support, a specified and measurable level of service guarantee (in terms of response and resolution times etc.), support options, enforcement or penalty provisions for services not provided. The business needs for delivering such critical services are

- Establish, track, and measure service level performance and distinguish priority situations
- Initiate proactive service level management by aligning IT services with business needs
- Ensure customer satisfaction by delivering the speed and quality of service level that customers expect
- Prevent miscommunication between IT and business about reasonable service levels for particular processes or types of business

At ITC Infotech, our IT Support staff can manage the entire range of service level agreement (SLA) processes, from defining SLAs and monitoring compliance to collecting and analyzing performance data, addressing problem areas, and continually refining the services offered. Our well-established exclusively designed and implemented Service Level Agreements also enables real-time, proactive SLA management to ensure that you meet or exceed expectations. As a result, you can keep IT service delivery closely aligned with business requirements and continually improve service quality.

SERVICE LEVEL AGREEMENTS - APPROACH

Severity Time		Response	Work-around Time	Resolution Time
	1	60 minutes	6 hours	24 hours
	2	4 hours	4 working days	10 working days
	3	1 working day	7 working days	21 working days
	4	2 working days	7 working days	30 working days

NOTE: This is a sample. SLA Metrics table; actual metrics shall be filled in as per each client's specific context and needs, jointly.

ITC Infotech provides world-class customer specific AMS services. This is facilitated by our well-established approach to defining Service Level Agreements that are customized for each customer's business context, needs and operating environment. Such SLAs are established through a stepwise process, some critical elements of which are described below:

Gather background information - This is the initiating phase where service needs and priorities are defined and detailed. This is usually conducted onsite at customer's locations. At this stage the current customer satisfaction levels are also assessed so as to clearly understand customer concerns and establish a baseline for assessing service improvements. This phase also clearly outlines the functional scope of the engagement, which is established through a knowledge transfer exercise.

Establish Engagement Ground Rules - In this critical, but often overlooked, step the SLA developers focus not on the agreement, but on the process by which ITC Infotech and customer representatives will work together to create the agreement. Issues to be discussed include the division of responsibility for development tasks, scheduling issues and constraints, and concerns regarding potential impediments. In addition, the teams can benefit greatly by discussing their communication styles and preferences. By identifying similarities and differences right up front, they will be in an excellent position to minimize conflict.

Pre-implementation tasks - This step entails the identification and completion of tasks that must precede SLA implementation. Such tasks include developing tracking mechanisms, establishing reporting processes, developing procedures for carrying out stated responsibilities, communicating expectations to staff, and providing pertinent training. Management responsibilities include providing a point of contact for problems related to the agreement, maintaining ongoing contact with the customer, conducting service reviews, coordinating and implementing modifications to the SLA, and assessing and reporting on how the to further enhance such critical engagements.

AMS ENGAGEMENT LEVELS

ITC Infotech is currently engaged in providing Level 1, Level 2 and Level 3 services to some of the fortune 500 customers across the globe. ITC Infotech has an ITIL based Incident Management Process. The purpose of this process is to establish a system, which will help in recording the issues and their resolution. This process explains how calls are received, recorded, resolved and closed within a reasonable time frame. This process also assists in the auditing of the quality of the service rendered by Service Desk with respect to time frame taken to resolve calls and to monitor service levels so as to provide best of breed service to the user through continual improvement. Service Desk operates 24*7 and is accessible via E-mail or via telephone or through system logins and is manned by a predefined number of persons at any given time within the Service Window. Service Desk is also the single point of contact for all end users and with respect to 1st level, 2nd level and 3rd level Issues.

- **Level 1 -** The level 1 engagement team performs initial diagnostics of the issue reported and if required escalate to the 2nd level of support. If the issue requires minor troubleshooting then the same is handled and resolved.

- **Level 2 -** The level 2 engagement team absorbs the analysis done by Level 1 teams and then proceeds further on an unresolved issue by addressing four possible areas.

    o *Application Environment – Network Administration and Support*
    o *Operating Environment – Database Administration and Support*
    o *Production Control – Version Control*
    o *Systems Operations – System Administration and Support*

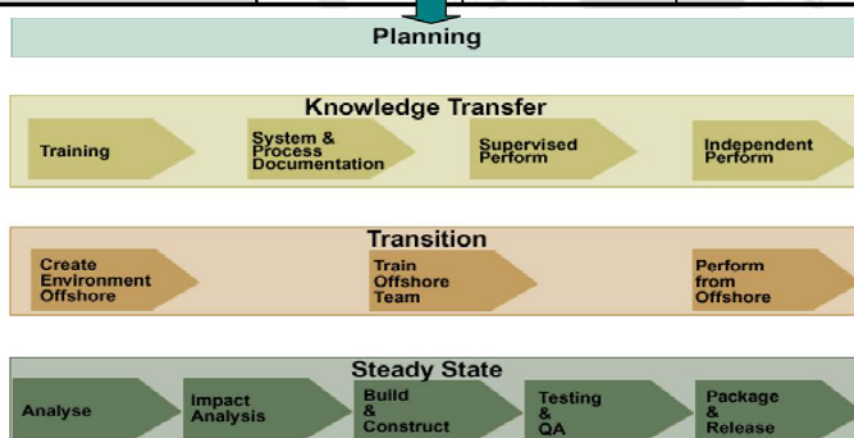## AMS ENGAGEMENT LEVELS ...CONTINUED
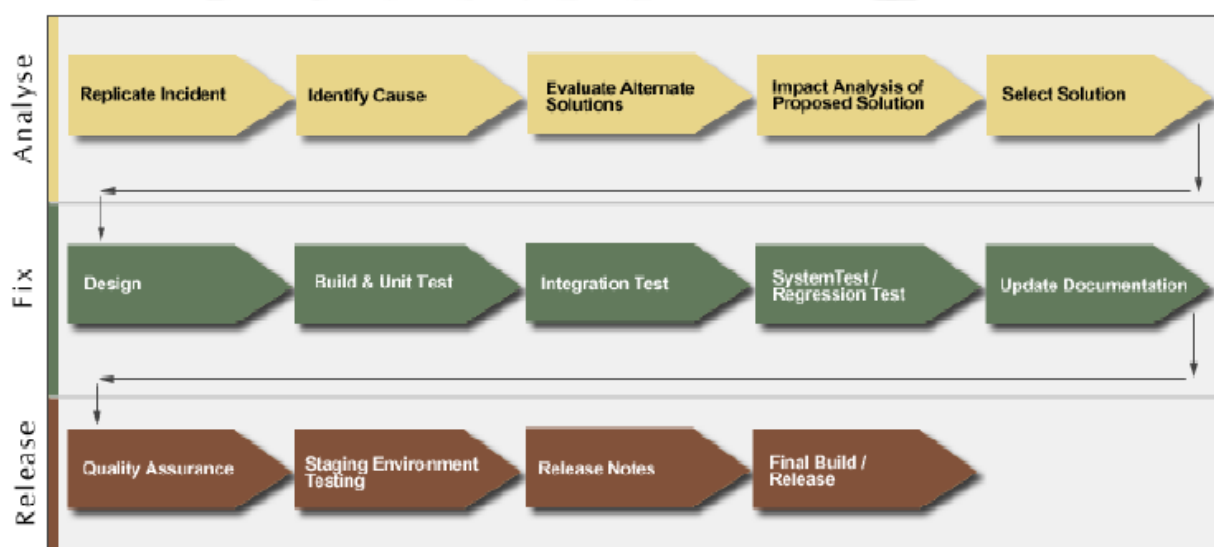
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- **Level 3 -** The level 3 engagement team absorbs the analysis done by Level 1 and Level 2 teams and then proceeds further on an unresolved issue. At this stage due to the nature of the issues, it is required to make code and design level changes. Considering the criticality of the situations, these issues are resolved through a well-established proven execution mechanism which is depicted in the figure above. The execution is divided into three phases namely Analysis, Fix and Release.
- *Analyze* – This phase includes issue simulation, Identifying and analyzing the root cause and impact analysis. The final solution is selected for a list of alternatives.
- *Fix* – This phase includes the code and design level change implementation and verification process.
- *Release* – This phase is the last phase where the release kit is quality assured and finally released to the customer.

AMS OFFSHORE METHODOLOGY

ITC Infotech also has a systematic and proven methodology for evaluating and managing offshore transitions. Here below are the typical offshore-ability indicators table, and a graphical representation of the process.

Release Schedule	Ad Hoc	Scheduled with occasional emergencies	Predictable, periodic releases
Trouble history	Volatile	Low severity	Predictable
Interfaces	Large Number/ External Companies	Large number/ internal systems	Low numbers/ internal systems
Technology/Architecture	Non-standard	Documented	Standard/well documented
Development methodology/Code	RAD/undocumented unstructured code	Standard/documented	Standard methodology / structured / well documented
Functionality	Very complex, deep dependence of SMEs	Medium complexity	Straightforward custom or package application
Life Cycle	Still in development	Recently implemented	Mature production application
Level of User Interaction	Frequent, in-depth	Regular, planned	Periodic
Required Skill sets available offshore	Need to develop	Similar/ complementary	Available

Planning

Knowledge Transfer
Training | System & Process Documentation | Supervised Perform | Independent Perform

Transition
Create Environment Offshore | Train Offshore Team | Perform from Offshore

Steady State
Analyse | Impact Analysis | Build & Construct | Testing & QA | Package & Release

CASE STUDY

Background

The Internet is the fastest growing banking channel today, both in the fields of Corporate and Retail banking. The development of this new channels being driven by more factors than one:

- First and foremost it is a manifestation of customers' demand to access bank services online, at any time, and from anylocation that allows access to Internet.

- The importance of Internet banking has major business side repercussions as well:

    o It offers a cost efficient alternative to telephone and branch banking, due to the relatively low maintenance and update expenses.

    o Also, while it expands the bank's availability and enhances its reach into its clientele, this comes at reduced customer support cost, since there is no need for any corresponding human interaction at the bank end.

However, the very growing importance of this banking channel creates an absolutely critical need – the Internet banking system needs to be available 24x7, and the system performance needs to be constantly monitored and tuned, in order to ensure a consistently great online customer experience.

Synopsis

This case study describes how one of the world's largest banks, who, in spite of its web banking system being supported by one of the global IT services leaders, was facing increasing levels of problems that caused a severe margin crunch for the web banking business and posed a risk oflowered user experience of the online banking system. Consequently, the client's satisfaction rating for this global SI fell to an alarming 2 in a 5point vendor rating scale.

This case study also goes on to describe how ITC Infotech was brought in at this criticaljuncture to assuage this problem, and how ITC Infotech managed to quickly take charge of supporting and maintaining the Internet banking system. Over time ITC Infotech not only ensured that the client's satisfaction ratings went up allthe way to the maximum possible level(5 out of 5), but also delivered consistent and sustainable year on year savingsin millions of dollars.

Currently, ITC Infotech completely supports the web banking system, managing all uptime, performance and securityissues on a 24x7 service delivery model, while also making sure that complex thirdparty application interfaces are managed, incidents are resolved within SLAdriven turnaround timelines, and change requests are implemented on demand.

Client

ITC Infotech's client is the ninth largest bank in the world, the fourth largest in Europe and the biggest in the Euro zone by market capitalization. It has more than 126,000 employees, 63 million customers, 10,000 branches and 2.6 million shareholders. While its main business focus is retail banking, it also offers a full range of personalfinancialservices, both directly as also throughintermediaries. The UK arm of this giant group was the client for this ITC Infotech project.

Context

The Client's Internet banking service offers services such as customer enrolments, money transfer accounts, credit card accounts, fixedrate loan accounts etc. to its customers, with more than ten sub-products under these categories. The IT maintenance and support services for this Internet banking system was outsourced by the Client to a global IT services and SI major. However, the Client was concerned with the quality of services received, and on one side the cost of maintenance was placing the Net banking business margins under constant pressure, while on the other side theinternal vendor rating had dropped to almost thelowest rating possible(2 out of 5).

It is in the context, with the twin objectives of enhancing the customer experience and system performance, and of reducing ongoing costs on application maintenance of the system, that the client engaged with ITC Infotech.The key services delivery objectives included:

- 24 x 7 x 365 SLAdriven application Maintenance and Support of the system
- SLAdriven optimized incident resolution and ondemand change implementations
- Overallimprovement of online banking customer satisfaction rating

Technical Architecture
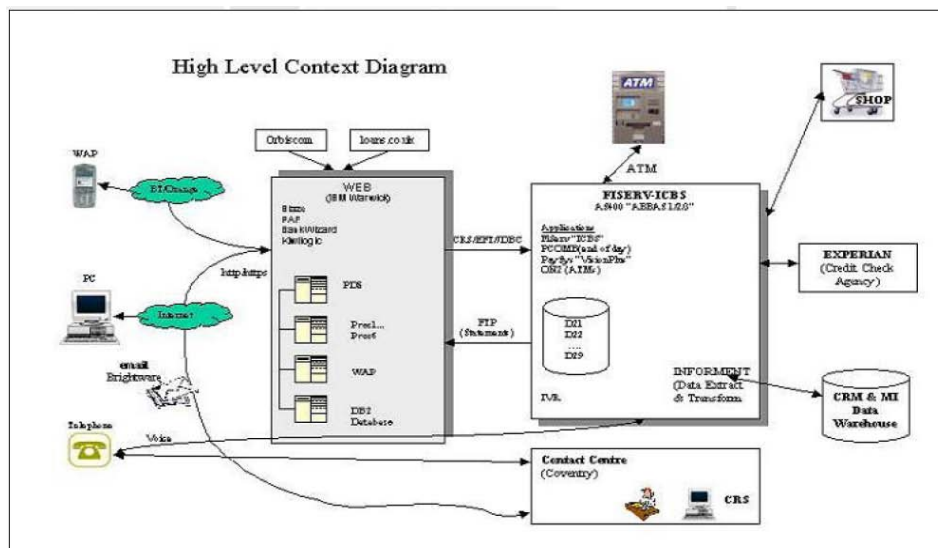
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A thorough understanding of complex system interfaces around the application and ensuring 100% application availability held the key to success for this project. This involved:

- A quick grasping of the existing system architecture and code implementation
- A rapid knowledge transfer signoff from the incumbent service provider
- A clear and comprehensive definition of the scope of work in a context of numerous third-party application interface interactions
- Putting in place an optimised incident resolution and change implementation mechanism, with an aim to substantially reduce the turnaround time for fixes to be applied

Technical Environment

Hardware
AIX F50
Software
DB2 AIX 5.1 WebSphere Application Server 5.1
Special tools
PVCS Dimensions
VAJ repository

Highlights

- In spite of a difficult transitioning atmosphere with the outgoing IT services provider, a rapid and comprehensive knowledge transfer, achieved within weeks.
- A successful and trouble free full scale transitioning of the entire AMS service in as little as 90 days.
- 100% adherence to stringent SLAs, including zero error API customisation and management for the entire complex set of 3rd party application interfaces.
- Bottom up generation of a major share of documentation for the entire web banking system incorporating the process quality learnings of a CMM Level5 organization

Benefits

Leveraging its knowledge in both the banking domain and enterprise architecture implementations, ITC Infotech was able to achieve significant successes around the system's application maintenance and support. The two primary benefits accrued were:

- ITC Infotech's offshore AMS services opened the way for a sustainable and consistent annual savings of GBP 1 million year-on-year for the client.

- The maintenance & support for the critical web banking system stabilized Client ratings for Internet banking support and maintenance services climbed up from an abysmal 2 to touch a maximum level of 5 on a scale of 5, and steadied at an average of 4 out of 5 across 12 months.