Developing a strategy for the SOA market at a leading software vendor

by
George Williams

B.S. Marine Transportation
Massachusetts Maritime Academy 1987

Submitted to the MIT Sloan School of Management in Partial Fulfillment of the Requirements
for the Degree of
Master of Science in the Management of Technology
At the
Massachusetts Institute of Technology
June 2007

&

Mahesh Jayakumar

B.S. Computer Information Systems
Purdue University 1994

M.S. Computer Science
Boston University 2005

Submitted to the MIT Sloan School of Management in Partial Fulfillment of the Requirements
for the Degree of
Master of Business Administration
At the
Massachusetts Institute of Technology
June 2008

Signature of Author: _____
MIT Sloan School of Management
May 11, 2007

Signature of Author: _____
MIT Sloan School of Management
May 11, 2007

Certified By: _____
Arnoldo C. Hax
Alfred P. Sloan Professor of Management
Thesis Advisor

Accepted By: _____
Stephen J. Sacca
Director, MIT Sloan Fellows Program in Innovation and Global Leadership

Developing a strategy for the SOA market at a leading software vendor

by

George Williams

Submitted to the MIT Sloan School of Management on May 11th 2007 in Partial Fulfillment of the Requirements for the Degree of
Master of Science in the Management of Technology

&

Mahesh Jayakumar

Submitted to the MIT Sloan School of Management on May 11th 2007 in Partial Fulfillment of the Requirements for the Degree of
Master of Business Administration

ABSTRACT

The Delta Model Framework provides an excellent platform to analyze and develop a business strategy that will assure the firm has competitive advantage. Its foundation is in the three core positions, Best Product, Total Customer Solutions and System Lock-in. These positions allow the framework's users to segment and position different customer tiers to maximize the firm's bonding and value proposition at each tier.

The framework also allows its users to perform an in depth analysis of the firms competencies and depict the gaps in these competencies that the firm must address to carry the desired strategy forward. With these gaps addressed the model then allows its users to develop metrics to assess the efficacy of the strategy.

The thesis team has applied the Delta Model framework to a leading software vendor as it looks toward capturing Service Oriented Architecture (SOA) market share.

Thesis Supervisor: Arnoldo C. Hax
Alfred P. Sloan Professor of Management

Developing a strategy for the SOA market at a leading software vendor

Mahesh Jayakumar & George Williams
Sloan School Of Management
Massachusetts Institute of Technology
15.THG – Spring 2007

Table of Contents

THE DELTA MODEL INTEGRATED FRAMEWORK **17**

OVERVIEW OF SOA **21**

WHAT IS SOA? 21

BUSINESS DRIVERS FOR SOA 25

IMPLEMENTING SOA 27

Java and its associated technologies *28*

CORBA *28*

Web Services *28*

CHALLENGES TO IMPLEMENTING SOA 29

Organizational *29*

Technological *30*

OTHER IT TRENDS AND ITS EFFECT ON SOA 31

OVERVIEW OF CA INC. **33**

BUSINESS UNITS 34

EITM (ENTERPRISE IT MANAGEMENT) 36

INTEGRATION PLATFORM AND SOA 39

CUSTOMER SEGMENTATION & VALUE PROPOSITION **43**

TIER 1 – VISION PARTNER 45

TIER 2 - STRATEGIC CLIENT 49

TIER 3 – PILOT PROJECT CUSTOMER 52

TIER 4 – PRODUCT SEEKER 55

BUNDLE OF COMPETENCIES **59**

BEST PRODUCT 59

TOTAL CUSTOMER SOLUTIONS 61
SYSTEM LOCK-IN 65
DESIRED BUNDLE OF COMPETENCIES 66
MISSION OF THE BUSINESS 69
PRODUCT SCOPE 70
Challenges from the changes in the Product Scope 71
SERVICE SCOPE 72
Challenges from the changes in the Services Scope 73
CUSTOMER SCOPE 73
Challenges from the changes in the Customer Scope 74
END USER SCOPE 74
Challenges from the changes in the End-User Scope 75
CHANNEL SCOPE 75
Challenges from the changes in the Channel Scope 75
COMPLEMENTORS SCOPE 76
Challenges from the changes in the Complementor Scope 76
GEOGRAPHIC SCOPE 76
Challenges from the changes in the Geographic Scope 77
UNIQUE COMPETENCIES 77
Challenges from the changes in Unique Competencies 78
THE STRATEGIC AGENDA 79
SOLIDIFY THE OFFERINGS 82
Define and build the SOA Security Management Offerings. 83
Define and build the SOA Business Services Optimization (BSO) Offerings 84
Define and build the SOA Storage Management Offerings 85
Define and Build the SOA Enterprise Service Management (ESM) Offerings 86
Develop a Common Interface Platform 87

BUILD INTERNAL CAPABILITIES 88
Hire personnel and develop technical capabilities in the engineering organization. 89
Hire personnel and develop technical capabilities in the various services organizations including support and technical services. 90
Become an Integral Part of the Standards Committee 91
Build and Educate Sales Force on SOA 92
Build Internal SOA Committee 93
BUILD MARKET SHARE 94
Increased SOA enabled and SOA enabling solution sales 94
Increase education of partners on the firm's products towards deploying SOA based infrastructure 95
Build External Credibility in SOA Space 96
CUSTOMER TARGETING (CT) **97**
CUSTOMER TARGETING REQUIREMENTS 97
ENVIRONMENTAL SCAN 100
COMPARISONS WITH THE FIRM'S COMPETITORS 100
CRITICAL EXTERNAL FACTORS FOR CUSTOMER TARGETING 103
Summary of Critical External Factors 106
INTERNAL SCRUTINY 106
CUSTOMER TARGETING (MARKETING) STRATEGIC AGENDA 112
Analyze the Functional Gap between the customer needs and the Firm's Offerings 116
Develop better Mechanisms to Capture Market Intelligence from External Channels 117
Increase Bonding with and education for VARS and System Integrators 118
Increase Support Mechanisms for VARS and System Integrators 119
Increase list of System Integrator/Service Providers 120
Create target list of companies that can be potential tier 1 or tier 2 customers. 121
Create Brand Awareness Centered around SOA 122
Host Conferences to showcase the Firm's Offerings 123

Create 'How To' Guides *124*

Summary of the Customer Targeting Requirements of the Firm *125*

OPERATIONAL EFFECTIVENESS (OE) **127**

OPERATIONAL EFFECTIVENESS REQUIREMENTS 127

COMPARISONS WITH THE FIRM'S COMPETITORS 132

CRITICAL EXTERNAL FACTORS TO OPERATIONAL EFFECTIVENESS 134

Summary of Critical External Factors *136*

INTERNAL SCRUTINY 136

OPERATIONAL EFFECTIVENESS STRATEGIC AGENDA 143

Analyze Functional Skills Gaps *146*

Develop Better Use Case Mechanisms *147*

Develop Training Resources *148*

Improve Human Resource Recruiting Effort *149*

Reevaluate Incentive Programs *150*

Reevaluate Business Process and Product Development Lifecycles *151*

Offshore a Large Portion of the Development Process *152*

Reevaluate the Sales and Marketing Efforts *153*

Create a Knowledge Base and Case Guides *154*

Summary of the Strategic thrusts for Operational Effectiveness *155*

INNOVATION (TECHNOLOGY) (I) **157**

INNOVATION REQUIREMENTS 157

IDENTIFYING THE STU'S 161

TECHNOLOGY ATTRACTIVENESS OF THE STU'S 163

TECHNOLOGY ATTRACTIVENESS/TECHNOLOGY STRENGTH PORTFOLIO MATRIX 174

TECHNOLOGY STRENGTH COMPARISON 175

CRITICAL EXTERNAL FACTORS TO INNOVATION 176

Summary of Critical External Factors *178*

INTERNAL SCRUTINY 178
INNOVATION STRATEGIC AGENDA 182
Develop capabilities in the end-to-end SOA solution stack component - Application Platforms 187
Develop capabilities in the end-to-end SOA solution stack component – XML Gateway 188
Develop capabilities in the end-to-end SOA solution stack component – Orchestration Engine 189
Develop capabilities in the end-to-end SOA solution stack component – Contract Management 190
Continue to strengthen the firm's existing components in the end-to-end SOA solution stack 191
Continue to refine existing SDLC (Software Development Life Cycle) methodology 192
Use of common components across various products from the firm 193
Use of collaboration tools across the firm 194
Use of learning tools across the firm 195
Use of demonstration tools across the firm and larger customer base 196
METRICS 197
AGGREGATE METRICS 197
FINANCIAL EVALUATION 197
BALANCED SCORECARD 201
The Firm's Scorecard 201
Tier 1 - Vision Partner 203
Tier 2 - Strategic Partner 205
Tier 3 – The Small /Pilot Customer 207
Tier 4 - Product Seeker 209
APPENDICES 211
REFERENCES 213
GLOSSARY OF TERMS 215

List of figures and tables

Figure 1 – Delta Model – Three Distinct Strategic Options (15.902 Lecture Notes – Fall 2006) ... 17

Table 2 - Delta Model Strategies (15.902 Lecture Notes) ... 18

Figure 3 – Delta Model Integrated Framework (15.902 Lecture Notes) ... 19

Figure 4 – Heterogeneous landscape at various levels of Enterprise IT ... 22

Figure 5 – Definition of key terms for a SOA ... 23

Figure 6 – An SOA usage scenario in retail banking ... 25

Figure 7 – Expected areas of impact ... 27

Figure 8 – Billings's breakdown for 9 months ending December 2006 ... 33

Figure 9 – CA's EITM Vision ... 37

Figure 10 – The firm's integration platform ... 39

Figure 11 - The firm's integration platform – up-close ... 40

Figure 12 – Positioning of the identified customer segment tiers ... 44

Table 13 - Business Dimension for Tier 1 ... 46

Table 14 – Value Proposition for Tier 1 ... 48

Table 15 - Business Dimension for Tier 2 ... 50

Table 16 - Value Proposition for Tier 2 ... 51

Table 17 - Business Dimension for Tier 3 53

Table 18 - Value Proposition for Tier 3 54

Table 19 - Business Dimension for Tier 4 56

Table 20 - Value Proposition for Tier 4 56

Table 21 – Acquisitions by CA Inc. in the past three years 60

Figure 22 - CA Technology Services Lifecycle 62

Figure 23 – The firm's maturity model applied to IT assessment and more 63

Figure 24 - The firm's current bundle of competencies 66

Figure 25 -The firm's desired bundle of competencies 67

Figure 26 – Priority Assessment Scale for Business Scope 69

Table 27 – Strategic Agenda of the firm 81

Table 28 - Customer Targeting Position Analysis 97

Table 29 – Customer Targeting Strategic Agenda for the firm 100

Table 30 - Competitive Profile of IBM vs. the Firm 101

Table 31 Competitive Profile of HP vs. the Firm 102

Table 32 - Critical External Factors for Customer Targeting 105

Table 33 - Internal Scrutiny for Customer Targeting 111

Table 34 - The Strategic Agenda for the Firm on Customer Targeting 115

Table 35 - Operational Effectiveness Position Analysis 127

Table 36 - The Strategic Agenda for the firm and Operational Effectiveness requirements 131

Table 37 - Competitive Profile of IBM vs. the Firm 132

Table 38 - Competitive Profile of HP vs. the Firm 133

Table 39 – Critical factors for Operational Effectiveness 135

Table 40 – Internal scrutiny for Operational Effectiveness 142

Table 41 - Operational Effectiveness Strategic Agenda of the firm 145

Table 42 – Innovation (Technology) Position Analysis 157

Table 43 -The Strategic Agenda for the firm and Innovation requirements 160

Table 44 – Identification of Strategic Technology Units (STU's) for Competitive Advantage 162

Table 45 - Technology Attractiveness for STU #1 163

Table 46 - Technology Attractiveness for STU #2 164

Table 47 - Technology Attractiveness for STU #3 165

Table 48 - Technology Attractiveness for STU #4 166

Table 49 - Technology Attractiveness for STU #5 167

Table 50 - Technology Attractiveness for STU #6 168

Table 51 - Technology Attractiveness for STU #7 169

Table 52 - Technology Attractiveness for STU #8 170

Table 53 - Technology Attractiveness for STU #9 171

Table 54 - Technology Attractiveness for STU #10 172

Table 55 - Technology Attractiveness for STU #11 173

Table 56 - Technology Portfolio Analysis for the firm 174

Table 57 - Competitive Profile of IBM vs. the Firm 175

Table 58 Competitive Profile of HP vs. the Firm 175

Table 59 – Critical factors for Innovation 178

Table 60 - Internal scrutiny for Innovation 181

Table 61 - Innovation Strategic Agenda of the firm 186

Table 62 - Financial Projections w/o SOA 199

Table 63 - Financial Projections with SOA 200

Table 64 - Firm Scorecard 201

Table 65 - Vision Partner Scorecard 203

Table 66 - Tier 2 - Strategic Partner Scorecard 205

Table 67 - Tier 3 – The Small /Pilot Customer Scorecard 207

Table 68 - Tier 4 - Product Seeker Scorecard 209

Table 69 - List of technology components in an end-to-end SOA solution 212

The Delta Model Integrated Framework

While there are numerous strategic management frameworks including *Michael Porter's Five Forces* and the *Resource-Based View of the firm*, we will be using the Delta Model to devise a strategy for the SOA offerings in our firm.

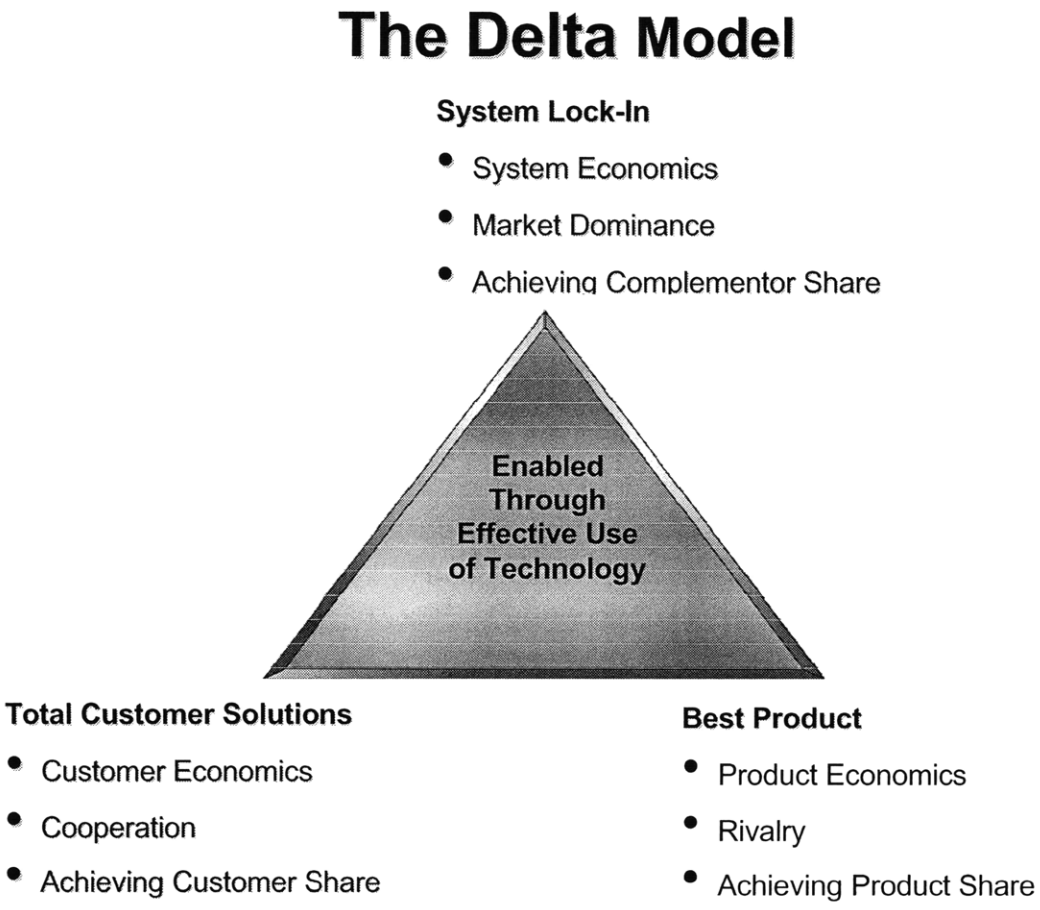


Figure 1 – Delta Model – Three Distinct Strategic Options (15.902 Lecture Notes – Fall 2006)

In the next table, we outline the focus of the business strategy at a given position in the triangle along with any drawbacks and advantages as the position. It must be noted that the ultimate strategic position to achieve is that of System Lock-In through a clockwise traversal along the two corners and the base of the triangle.

Positions	Definition	Comments
Best Product	*Centered on product economies*	
Low cost	Focus on being the lowest cost provider in an undifferentiated product category	Since there is only one lowest cost producer, this strategy leaves very little space as a competitive position. It also tends to standardize the product offering, commoditize the customer, and intensify rivalry.
Differentiation	While maintaining effective production economies focus on key differentiation in the product features and functionalities such that the products are uniquely desired and command price premiums	The problem with this strategic position is that as soon as the differentiated product emerges, competitors tend to imitate them. A competitive advantage is therefore non-sustainable.
Total Customer Solutions	*Oriented to customer economics*	
Redefining the customer experience	A focus is placed on considering the full experience of the customer from the point of acquisition through to the complete lifecycle of ownership of the product	This positioning is based upon an intimate knowledge of the customer base leading toward effective customer segmentation and a differentiated treatment of the customer tiers.
Horizontal Breadth	A complete set of product and service offerings that fulfill the entire customer need are customized and provided. "One-stop shopping for a unique solution."	We are seeking a dominant position in "share of the wallet of the customer."
Customer Integration	This strategy seeks to effectively substitute for or leverages activities currently performed by the customer. It is outsourcing in its extreme form and at least represents a complex web of connections with the customer that enhance their ability to do business and to use your product.	The firm is regarded as a bundle of competencies that will be brought to the customer to enhance the customer economics.
System Lock-In	*Focuses on complementor economics*	
Restricted Access	Significant barriers are in place that makes it difficult for competitors to even compete for the acquisition of customers.	This is a difficult position to achieve and to sustain. Regulatory practices tend to be deployed to prevent it.
Dominant Exchange	With this strategy the company provides an interface between buyers and sellers that s very hard to displace once it achieves critical mass.	This is the most accessible of all of the systems lock-in options. The first mover advantage is critical.
Proprietary Standard	The customer is drawn to your product because of the extensive network of third party complementors that are designed to work with your product.	This option isn't available in most industries. If it can be achieved the rewards are enormous.

Table 2 - Delta Model Strategies (15.902 Lecture Notes)

While the Delta Model offers the strategic positioning for sustainable superior performance in an increasingly global and networked economy, the Delta Model Integrated Framework provides the mechanism to devise and implement the strategy. This integrated framework is shown below:

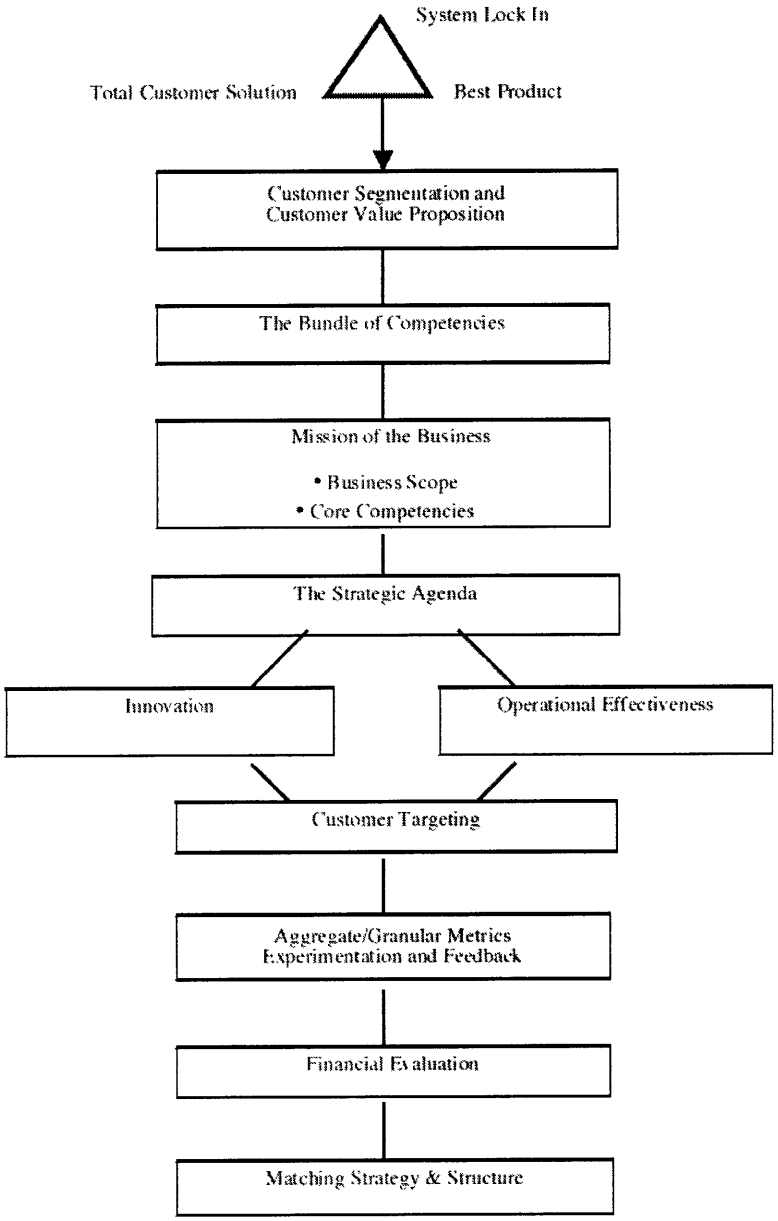


Figure 3 – Delta Model Integrated Framework (15.902 Lecture Notes)

Overview of SOA

In this document, it is our desire to present to the reader an analysis of the application of a management strategy methodology in understanding the future course of action for a leading technology company. The methodology is that of the Delta Model Integrated Framework created by Hax and Wilde and the application of this thought process is towards the future direction of CA Inc. (previously known as Computer Associates International Inc.) in its business strategy to provide technology solutions in the Service Oriented Architecture (SOA) space. In this section, we will not only introduce the reader to SOA, but also to the firm being studied.

It must be noted that all information presented in this document is deemed to be accessible and available to the academic community as well as outside parties as dictated by the rules of the various governing bodies in MIT. In order to protect confidential data as well as product information from the firm being studied, the authors cannot discuss certain subject matters in detail or in their entirety. Further, all sources used towards the preparation of this document are publicly accessible to the reader, the firm being analyzed as well as its competitors.

What is SOA?

Service Oriented Architecture or SOA is an architectural framework or approach that allows for solving the IT requirements of businesses, its processes and its users through the use of loosely coupled components. "It is a design discipline that allows an organization to be able to rapidly create new applications to support ever changing business requirements."[i] Since the middle of the 20th century, rapid technology improvements in computing hardware and its accompanying software has enabled the creation of Information Technology (IT) solutions that has automated previously manual operations at businesses of all sizes. Every aspect of a business from sales, billing and customer management to accounting and payroll has been transformed through proprietary in-house built solutions or through the customization and integration of technology from a multitude of hardware and software vendors. Each of the business processes of the enterprise was solved using a variety of systems from numerous vendors leading to an extremely heterogeneous IT landscape. As shown in Figure 1, a single technology area that is covered by a

business solution has a daunting list of choices. Now imagine constructing a complex business solution that spans one or more technology areas!

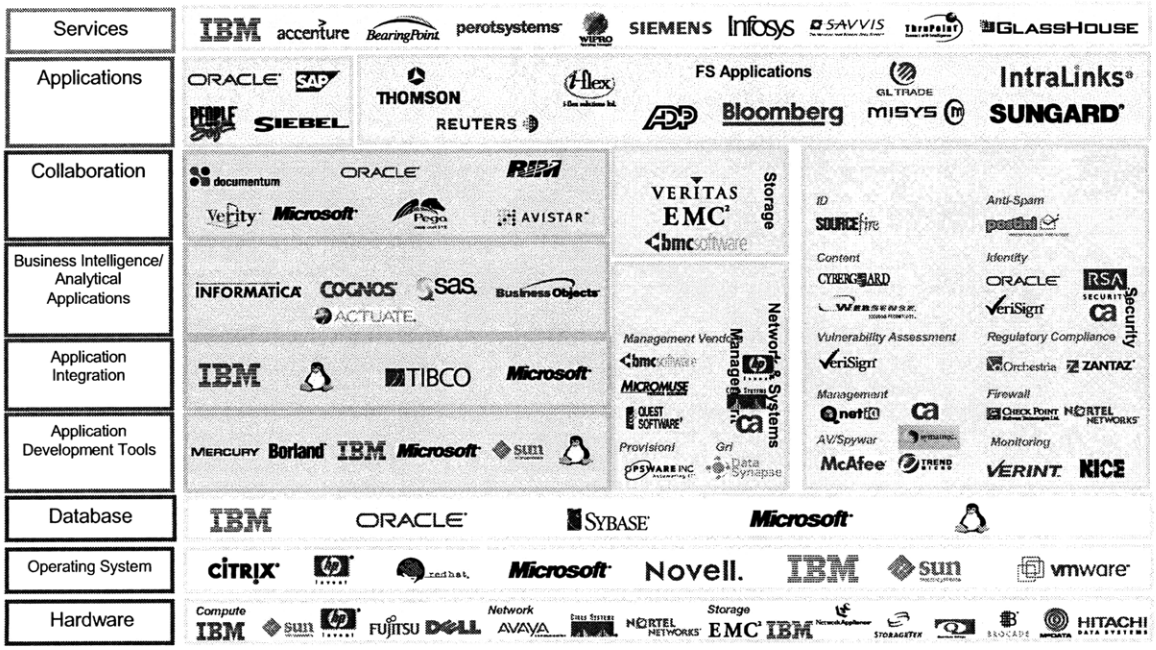


Figure 4 – Heterogeneous landscape at various levels of Enterprise IT[1]

The other main challenge for businesses is also to transform their IT departments from standalone departments that aimed to provide the minimum operational infrastructure to an integral and strategic contributor to business strategy. In the new era of globalization and a need for constant innovation, enterprises are faced with improving the business systems that were laid down earlier and now need to meet new requirements. Some try to do this in a cost effective manner through reuse of existing IT investments while others try to integrate new ones into existing infrastructure. The promise of SOA is to precisely bring about this change in an open yet precise manner. "Use of SOA increases reuse, lowers overall cost, and improves the ability to rapidly change and evolve IT systems, whether old or new."[ii]

---

[1] CA Inc. – Office of the CTO – SOA Day Presentation – March 2007

"A SOA is a style of design that guides all aspects of creating and using business services throughout their lifecycle. It is a way to define and provision IT infrastructure to allow different applications to exchange data and participate in business processes, regardless of the technology underlying those applications. Businesses that successfully implement SOA are likely to have a competitive edge over those who do not because those who have services aligned with strategic IT business goals can react quickly to changing business requirements than those who have IT systems that can perform a single task or are aligned with a particular environment." [ii]

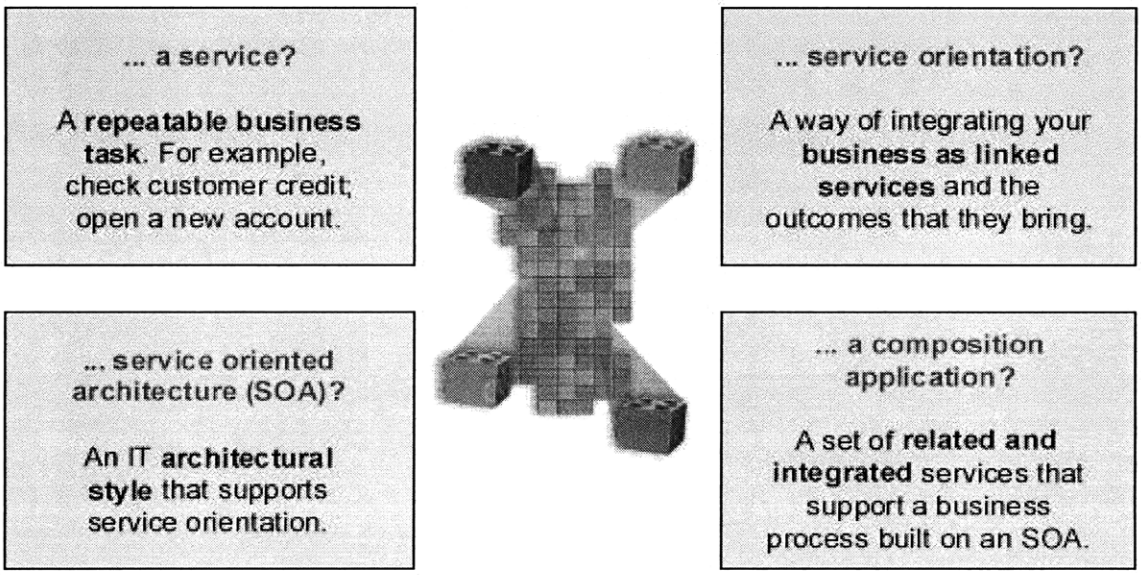


Figure 5 – Definition of key terms for a SOA[2]

Gartner's definition of SOA is a client/server software design approach in which an application consists of software services and their respective providers and consumers. A service in the SOA world is the basic unit or fundamental building block. It is representative of a repeatable business task. It consists of a service contract, one or more service interfaces, and a service implementation. A given service could be composite and consist of other services or be granular

to perform a single task. A service provider is the entity that creates the service and makes known to all applicable parties the availability of this service. The availability of the service along with its interface is published in a repository known as a service registry. A service consumer locates a service from the service registry and then uses it or consumes it. There are no boundaries on whether the service provider, consumer or the registry itself is located within or outside the enterprise.

You can also think of a service as analogous to an actual business task provided by an enterprise – ex: a get bank balance service that allows you to check a bank account balance. This physical task could be translated into a technical service that can now provide the same ability to check bank account balances from any other application or services that needs to perform this action as part of normal processing. This is exactly what is shown in the figure that follows in the context of other services and their aggregation in a retail bank. The diamond shape represents exposing the service.

Services can be implemented through a variety of technologies without the service consumer needing to understand the implementation details. This is done by exposing standards based interfaces that allow exchanging data in a neutral text based language such as XML. "The greatest benefit of service abstraction then is the ability to easily access a variety of service types, including newly developed services, wrapped legacy applications, and applications composed of other services (both new and legacy). Some software vendors still don't separate the idea of a service from the idea of the underlying execution environment and continue to sell services in their solutions only as a part of a larger pre-existing product. Decoupling of the service from the technology is the key to successful reuse of existing technology in SOA.

---

[2] Patterns: SOA Foundation Service Creation Scenario – Multiple authors - September 2006 – IBM Redbooks

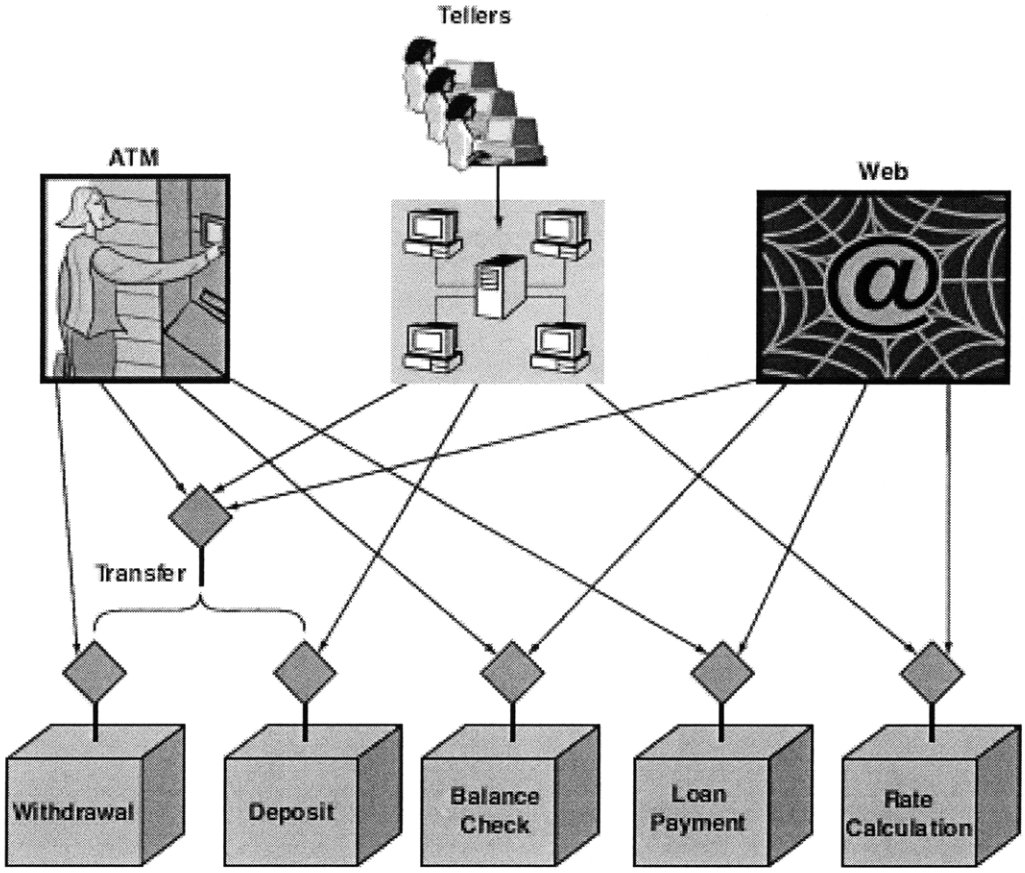


Figure 6 – An SOA usage scenario in retail banking[3]

Business drivers for SOA

Some of the key business drivers for adoption of SOA are as follows:

- Increased business agility – The ability to change IT systems when necessary to meet new opportunities and competitive threats. This requires being able to find the right service to fill the business need, being able to change service providers due to deprecation or lower pricing options, being able to quickly assemble new applications using existing and new services, being able to

support new delivery channels and new service requestors and finally being able to adjust capacity to meet increased or decreased business demands.

- Better business alignment – The ability to create and sustain business workflows that mirror business policies/processes ensures better asset usage as well as easier metrics gathering.
- Improved customer satisfaction- The ability to provide a consistent customer experience across all touch points regardless of the access mechanism (over the web, kiosks, call center support, face-to-face interaction) by being able to individualize the experience based on the availability of all the relevant customer data from any application at any location in the enterprise.
- Improve ROI of existing IT assets – Ability to improve the ROI of existing IT assets by promoting reuse of these assets.
- Reduced integration costs - Ability to reduce integration costs by avoiding tight coupling. Services; when created with well defined and platform neutral interfaces ensure rapid application development and deployment even in the most heterogeneous of IT environments.
- Reduced vendor lock-in and switching costs – Ability to use services as the fundamental unit in the IT architecture and break away from vendor specific technology ensures implementation of cost effective solutions at faster speeds.

In a recent poll of companies based in North America and Europe with more than $1 billion in revenues and at least one active SOA project, the key decision maker at the companies were asked about the expected areas of impact as a result of implementing SOA. The top reason from more than 65% of the respondents was that of improved customer service followed by faster times to market and other reasons as seen in the results from this survey are shown in the next figure.

---

[3] Patterns: SOA Foundation Service Creation Scenario – Multiple authors - Sep 2006 – IBM Redbooks

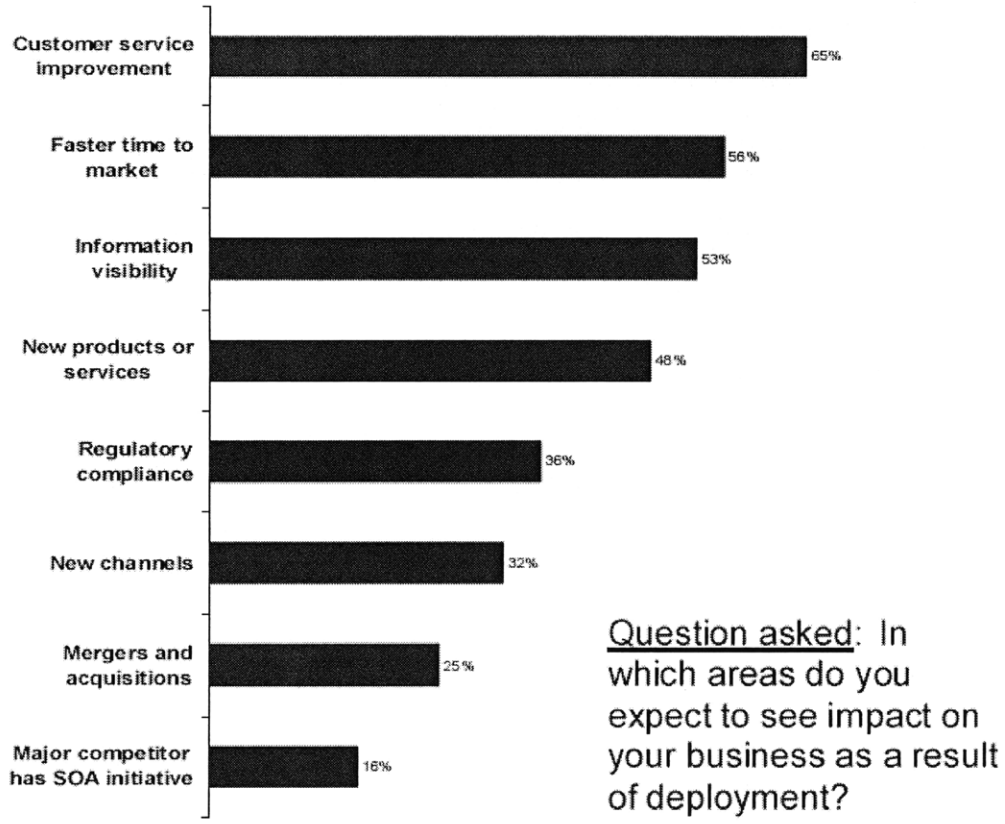


Figure 7 – Expected areas of impact[4]

Implementing SOA

So far we have talked about the various aspects of SOA including its definition, components and the business drivers for implementing it. However, we need to understand what the various paths to SOA are. Since SOA is a frame of mind, it can be brought together by a variety of underlying technologies and products. In fact, SOA is by definition "technology independent". SOA can be implemented using various technologies including the following:

---

[4] SOA Research – Costs and Benefits, Tripp Reiter and R. Scott Evans, March 2007, GCR

Java and its associated technologies

The Java programming language and its associated technologies including Java EE (Java Platform, Enterprise Edition) have the capability to provide users with the ability to create and use services using a variety of standards including:

- JAX-WS - The Java API for XML-Based web Services. it enables you to build and consume Web services with Java and is the successor standard to JAX-RPC.
- JAXB - The Java Architecture for XML Binding. The JAXB standard controls how Java objects are represented as XML and is tightly integrated with JAX-WS,
- WS-Metadata - Web Services Metadata for the Java Platform. It provides annotations that facilitate the flexible definition and deployment of Java Web Services.
- WSEE - Web Services for Java EE. It defines the programming model and runtime behavior of Web Services in the Java EE container.

CORBA

CORBA or Common Object Request Broker Architecture is a standard defined by the Object Management Group or OMG that enables software components written in multiple programming languages and executing on multiple platforms to interoperate. CORBA offers various integrated security, naming services and reliability. Even though it can support multiple programming languages, the language set is restricted and requires tight coupling using predefined data structures. It is a complex technology that cannot explicitly address XML exchange.

Web Services

The technology that is most ubiquitous for implementing SOA is Web Services. This technology uses a variety of protocols built on top of XML for the three important aspects of services – publishing a service for use, being able to find or discover a service, and finally using a service. Recall that XML is an independent data format that can support data types and structures independent of the programming interface or the system. The user is in complete control of what a given piece of XML text represents thus allowing complete freedom of usage and exchange.

The first XML-based protocol is called WSDL or Web Services Description Language. It is used by the service provider to publish the service that it offers. It is a service description mechanism that provides information on a service name, its location, the functionality offered (interfaces) as well as information on how to connect to it and use it.

The second XML-based protocol; UDDI or Universal Description, Discovery and Integration is used by the service consumer to discover a particular service. UDDI enables a "directory of services" which can federate with other directories to create a network of directories.

Now that the service is published and discoverable, consumers need to connect to it and finally use it. To enable this, we have another XML-based protocol called SOAP or the Simple Object Access Protocol which allows the service consumer to connect to the service provider and consume or connect to the service. Once connected, messages (request and responses) are exchanged using structured messages that are understood by both parties. In terms of exchanging the messages, it can be done over a variety of underlying protocols including HTTP; the widely used Hypertext Transfer Protocol which is the glue that hold the World Wide Web.

Challenges to implementing SOA

Some of the main challenges to adopting SOA can fall into the following categories:

Organizational

- Organizations need to change their mind set to accept costs associated with solving a business infrastructure for the future as well as the present. It is recommended that deployment occur in small scales while creating a longer term plan to change the entire infrastructure.
- Organizations need the correct resources in terms personnel to architect as well as develop the systems. Skilled and experienced engineers can be hard to find. Further more, it can be even more difficult to ensure that they are able to work well with the business analysts who may not understand the technology, but do have mastery of the actual business processes and work flows being automated or optimized.

Technological

- Variety of platforms - IT infrastructure can be built along SOA guidelines using a variety of underlying operating systems, programming languages and third party systems as long as the interfaces are neutral and allow loose coupling. However, we have already presented various alternatives to implementing a SOA based IT infrastructure project. Thus, technology vendors may have their own agenda in trying to enhance the value add of the solutions they provide causing organizations to get overwhelmed with the choices available and further complicating matters.
- Infrastructure challenges
    - Security – We think of SOA as the means to opening up existing and new IT systems in order to enable greater reuse and ease of integration. However, in an era where companies are more conscious than ever about security issues related to their IT infrastructure, it is important that any SOA implementation take into account security of services in the following aspects: Integrity (context and validity of service), Confidentiality (messages being exchanged with the service are not readable or interpretable), Authority (caller of the service is authorized to request the service), Authenticity (the identity of the service caller is valid thereby avoiding unauthorized and fraudulent use) and finally Non-Repudiation (proof of service execution). Since SOA integrates systems across various functional and organizational boundaries, it is also necessary to take into account, federation across multiple domains using credential mapping for a given user.
    - Governance – The processes, programs and guidance used to govern adoption and implementation of SOA are critical to its success. It is important that any SOA implementation take into account governance of services in the following aspects: Sourcing/Usage (who will be allowed to connect and use the service), Quality of Service (what is the threshold for quality – SLA's), Design of the service and its functionality and finally the technology used to create, provide and manage the service.
    - Management – SOA based IT infrastructure requires management in the following aspects – Procurement (how will the service caller pay for services used), Delivery (what are

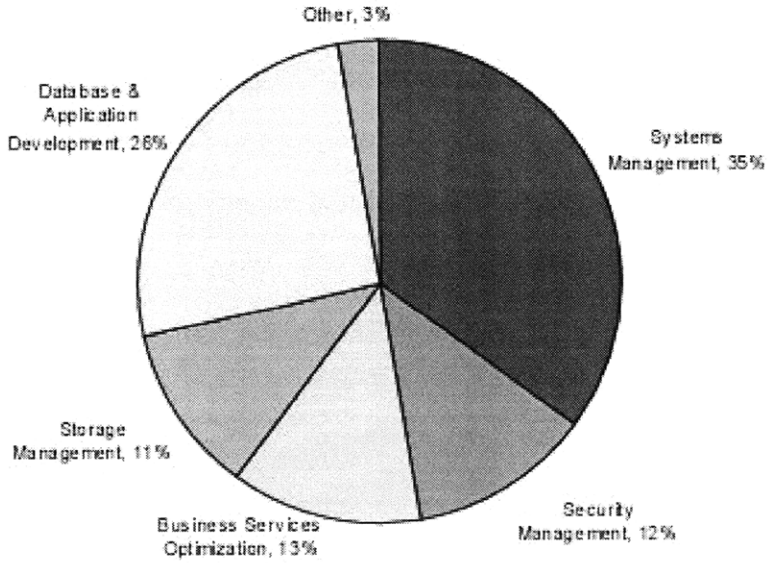
parameters for service availability), Support (who is the first point of contact and what are the terms for support) and finally Execution (managing the technology and the lifecycle of the service).

Other IT Trends and its effect on SOA

As more and more businesses try to reduce IT budgets and extract more value out of their existing infrastructure, technology vendors are also rising up to the challenge of providing solutions that help businesses cope with the complexity and fragmentation of their IT systems. They are also part of the ecosystem that is constantly touting new and better frameworks or technologies to make IT management cheaper and simpler. There are numerous programs and standards that are currently at play. IT Infrastructure Library (ITIL) is a framework of IT best practices from the United Kingdom's Office of Government Commerce. ITIL provides guidance on how to go about providing effect IT services. It espouses a service-focused approach to delivering and supporting IT services. "The objective of IT Service management processes is to contribute to the quality of the IT Services." [iii]From a resource perspective, Project and Portfolio Management techniques are being used to manage IT assets, people and projects to ensure better alignment with business needs. From a technology perspective the adoption of SOA is being done more and more through Web Services in order to create modular, reusable loosely coupled IT infrastructure. The link between ITIL and SOA can be seen from the fact that ITIL is all about people and processes aka governance and SOA needs good governance in order to be successful in an enterprise. Thus the two can coexist together rather nicely when it comes to Enterprise IT re-planning.

Overview of CA Inc.

"Founded in 1974 and headquartered in Islandia, New York, CA is one of the world's largest independent providers of information technology management software. The company's IT management software allows customers to manage and automate critical IT infrastructure." [iv] CA has steadily grown over the years through a series of acquisitions and is a provider of solutions across a range of computing platforms including its earlier offerings in the mainframe space. The firm has a portfolio of software products and services that encompass various enterprise computing functions including management of IT infrastructure, management of the security and access to this infrastructure, management of system and media providing storage and finally business service optimization. The firm is organized into various business units including Enterprise Systems Management (ESM), Security Management (SEC), Storage Management (STOR), Business Service Optimization (BSO) and the CA Products Group. With annual revenues around $4 billion, the next figure gives the reader an idea of the contribution by each of the business units at the end of 2006.



Source: CA and Jefferies & Company, Inc. equity research

Figure 8 – Billings's breakdown for 9 months ending December 2006

As of 2006, the firm had approximately 16,000 employees, with operations in over 50 countries around the world. It serves more than 98% of the Fortune 1000 as well as numerous government agencies and educational institutions. The main competitors of the firm include IBM, HP, BMC, EMC – each of whom try to offer holistic IT management solutions and certain smaller IT vendors that offer solutions in a given functional area such as Symantec (security management). We will now briefly describe each of the business units including highlighting certain products that have gained world-class acceptance in the IT management space.

Business Units

The Enterprise Systems Management business unit is responsible for providing infrastructure management solutions that can work across diverse IT assets such as networks, servers, storage, databases, applications and desktops or client devices, on both mainframe and distributed platforms. The products from this business unit span multiple product categories. The first of these is Service Availability products, which can monitor and optimize the availability and performance of IT assets. Second in the list is that of Resource Optimization products, which include configuration management, provisioning management and capacity management. Finally there is the last category of Process Automation which includes workload automation products. To list some of the most important products from this unit, we can start with the *Unicenter* family which covers all three product categories mentioned above. In addition to Unicenter, the other notable products include – *eHealth* which is used for distributed and voice network management (added to the firm's offerings through the acquisition of Concord), *Spectrum* which is used for network fault management (also through the acquisition of Concord) and, *netViz* which is used for IT documentation and visualization. There is also a product called *AllFusion* which is used for business process modeling.

The Security Management business unit is responsible for providing solutions that protect digital assets, provide appropriate system access to anyone who might need it (employees, customers and partners etc.) and, provide centralized security related administration capabilities. The products from this business unit span multiple product categories. The first of these is Identity and Access Management (IAM) products, which enable IT departments to manage user populations, secure digital assets and services. These

products also help organizations comply with critical regulatory mandates such as Sarbanes-Oxley and HIPAA to name a few. Second in the list of product categories is that of Threat Management products, which are designed to identify and eliminate harmful computer viruses and address any security weaknesses associated with modern computing technology such as credentials (password, pins etc.), Internet browsers, operating systems, databases and networks. Finally, there is the last category of Security Information Management which includes products for centralized management and auditing of real-time events or post-event forensics as well as providing custom views of various security related data required to achieve regulatory compliance. All of firm's products that span the above product categories are sold under the *eTrust* brand which will eventually be removed due to a major effort underway to simplify product names. The firm is the clear leader in Identity and Access Management with the *SiteMinder* family (added through the acquisition of Netegrity). Further, the firm's solutions in the Threat Management space offer products at both consumer (CA Internet Security Suite) as well as enterprise levels (CA Antivirus and CA PestPatrol). Another line of products that gives the firm a competitive boost in the security space is that of mainframe products that provide security for various IBM mainframe environments such as z/OS, z/VM and z/VSE.

The Storage Management business unit is responsible for providing solutions that manage business data in the context of storage resources. The products from this business unit span multiple product categories. The first of these is Recovery Management products, which provide data backup and recovery capabilities. Second in the list is that of Resource Management products, which enable management and monitoring of the storage environment along with automation of the storage processes. The third category of products; Information Management products allow customers to address compliance issues as they pertain to message management, searching and archiving. Finally, there is the last category of Mainframe solutions which provide storage management capabilities on the IBM z/OS environment. Some of the most important products from this business unit include the *BrightStor* product family. This product line has been complemented with other products through the acquisition of iLumin and MDY in the areas of email management and records management.

The Business Service Optimization unit is responsible for providing solutions that manage IT assets in the context of business services. The products from this business unit span multiple product categories. The first of these is Business Process Management products, which provide analysis, understanding and management of IT business process and policies. The *CleverPath* product line belongs to this category. Next, Service Management products provide provisioning, supporting, and management of IT Services. The *Unicenter* products centered on the IT helpdesk functionality is one of the most important in this category. The third category of products i.e. Asset Management solutions provide management of the technical and business aspects of hardware and software assets through their entire life cycle from procurement through termination. Finally, the category of IT Governance solutions include products that enable management of relationships between IT organizations and their business users. These products are also referred to as belonging to the Product and Portfolio Management category since they provide capabilities to ensure that IT assets are being put to optimal use inline with an enterprise's business. One of the most important products to cover this category is the *Clarity* family of products that was obtained through the acquisition of Niku. Recently, the firm also added capability to provide web based applications through the acquisition of Wily. These newly acquired products provide functionality for monitoring performance of enterprise class-middleware servers such as web servers, application servers and messaging servers.

All other products not grouped into the respective business units mentioned above as well as those that fall outside the core area of systems and security management belong to the CA Products Group. Certain mainframe and database products also fall into the realm of the CA Products Group. These products continue to generate revenue for the company and are often provided in the context of other products or solutions from one of the business units mentioned above.

EITM (Enterprise IT Management)

In the past two years, the company has committed to its customers on delivering a vision of *unifying and simplifying* IT in order to maximize business value through a framework called EITM (Enterprise IT Management). This framework is shown in the next figure adopted from the firm's web site. We will discuss

each of the components in the EITM vision and summarize how this corresponds to delivering value under the auspices of SOA.

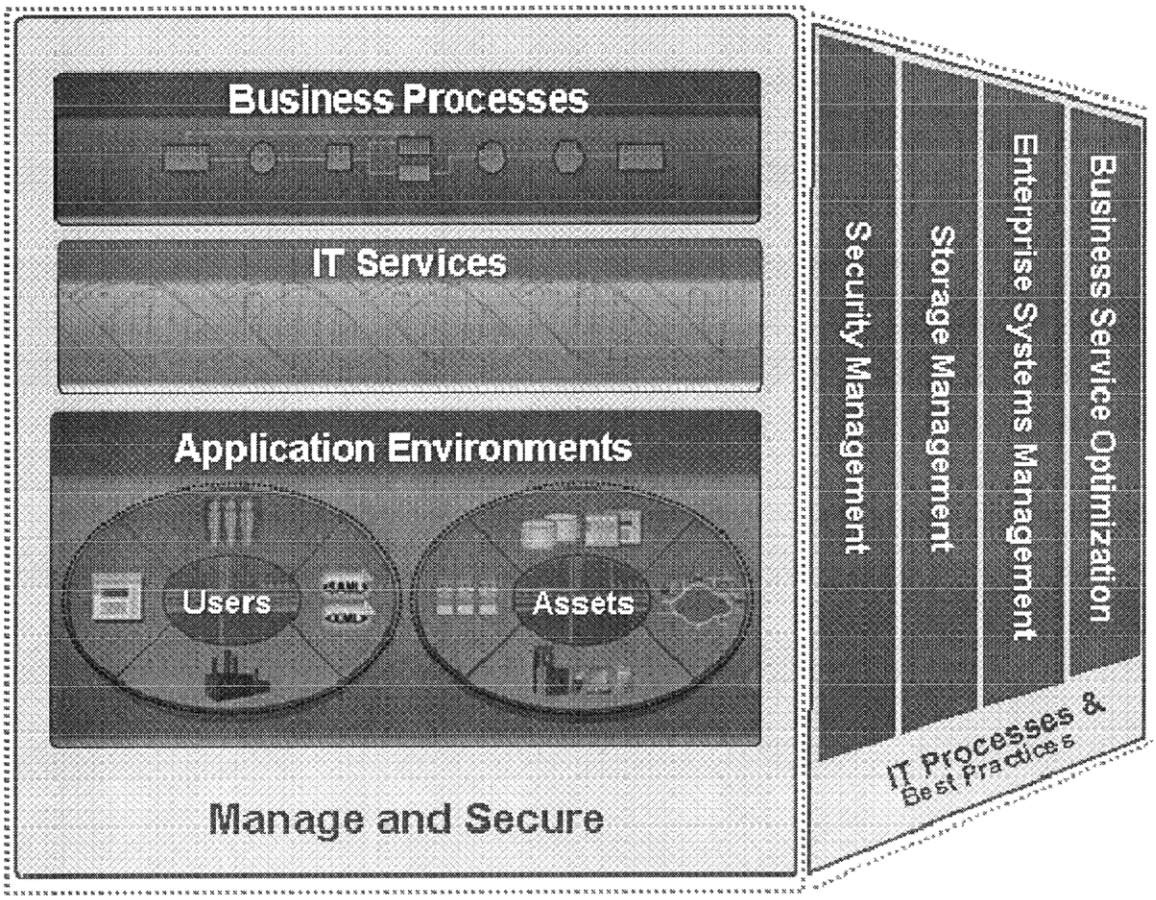


Figure 9 – CA's EITM Vision

In the firm's EITM vision, the fundamental entities which are managed and secured are Application Environments, IT Services and Business Processes. Application Environments provide the ability for Users (includes business users, system administrators, customers or partners and any entity; including non-human that interacts with the IT systems of the company) to interact with Assets (networks, servers, databases, storage devices and any other hardware/software that runs in the IT environment) within the confines of a well constructed infrastructure. Examples of Application environments include email systems such as Microsoft Exchanges and Lotus Notes, ERP systems such as Oracle and SAP and any other enterprise class middleware, database system, custom/proprietary applications built in-house or through an integrator.

IT Services are the layer on top of Application environments that rely on the underlying components and IT infrastructure to be executed and serviced. Thus the email service is a combination of the email systems mentioned earlier along with all resources available to manage the lifecycle of the email service (level of service, availability, security, fault tolerance etc.) The concept of email service includes all modes of interaction in order to use the service. Thus, a user can not only access email from a typical PC but also from handheld mobile devices such as a PDA or a Blackberry.

Business Processes are the tasks of an organization in order to carry out its normal course of business. According to Wikipedia, "A business process is a set of linked activities that create value by transforming an input into a more valuable output. Both input and output can be artifacts and/or information and the transformation can be performed by human actors, machines, or both. There are three types of business processes: Management processes - the processes that govern the operation, Operational processes – these processes create the primary value stream and are part of the core business such as Purchasing, Manufacturing, Marketing, and Sales and, finally Supporting processes - these support the core processes and include Accounting and Human Resources". In the EITM vision, Business processes use the layer below i.e. IT Services in order to be fulfilled. Thus all elements of the IT infrastructure and its services must be properly managed and secured in order to meet the requirements of the business and enable its business processes.

Now that we understand the players in the organization that need EITM, let's focus on the functionality provided by the firm to enable this vision. The key management functions required for EITM are provided across the same categories as that of the business units within our firm i.e. – Enterprise Systems Management (management of networks, systems, databases, applications, desktops etc. in order to ensure adequate service, automation and optimization), Security Management (management of digital identities as well as access to assets), Business Service Optimization (management of IT processes, projects and portfolios) and finally Storage Management (management of storage resources – both devices and software along with backup and recovery of these systems). By ensuring that the tools across these categories are integrated with each other using a common architecture namely - the CA Integration Platform (shown in the

following figure adopted from the firm's web site) the firm is able deliver in its promise of better managing IT. In the next section, we will quickly look at the relationship between the CA Integration Platform and SOA.

Integration Platform and SOA

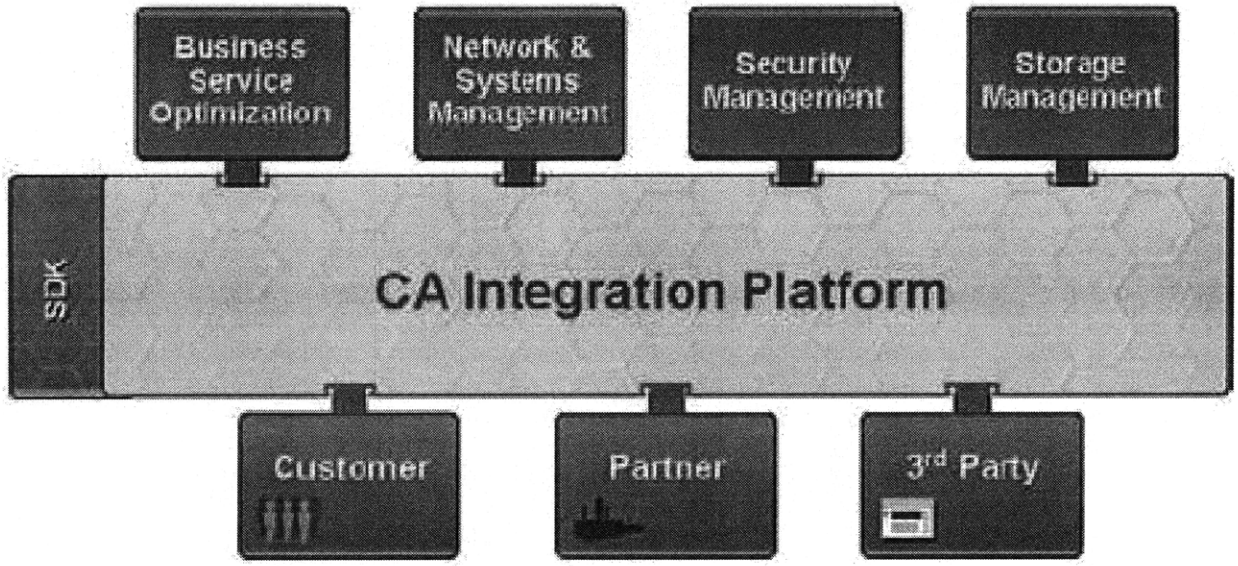


Figure 10 – The firm's integration platform

The CA Integration Platform enables integration not only among its own products, but also from other vendors using a set of shared services and components utilizing SOA. By making this platform a set of loosely connected modular services yet integrated enough, it delivers various benefits including: Common User Interfaces (GUI's), large functionality, multi-platform support and promotion of reuse. It also provides an SDK (Software Development Kit) as shown in the figure (adopted from the firm's web site) which the programmable interfaces used to integrate with the platform. Customers may wish to write custom applications that can inject or extract data from the platform. Partners may wish to provide added functionality to users by extracting data from the system while 3rd Party vendors may wish to create new value added applications on top of the platform. When inspecting the integration platform more closely as shown in the next figure one finds it leveraging SOA in order to ensure modularity and interoperability using three layers namely; Core Services, Management Services and Management Standards. Core Services are

the basic operational components of the platform and are comprised of Workflow (ability to orchestrate movement of data and information across systems and users), Rules and Policy (creation and administration of IT polices), Messaging (communication mechanisms for transmission of data and events), Application Server (J2EE based entity that provides the actual execution container or server to host the core services in a manner that is both highly available and fault tolerant), Modeling (services and tools that allows creation of the workflow, rules and management interfaces) and finally UI Services (delivery of consistent look-and-feel across all products using web based i.e. browser enabled components).

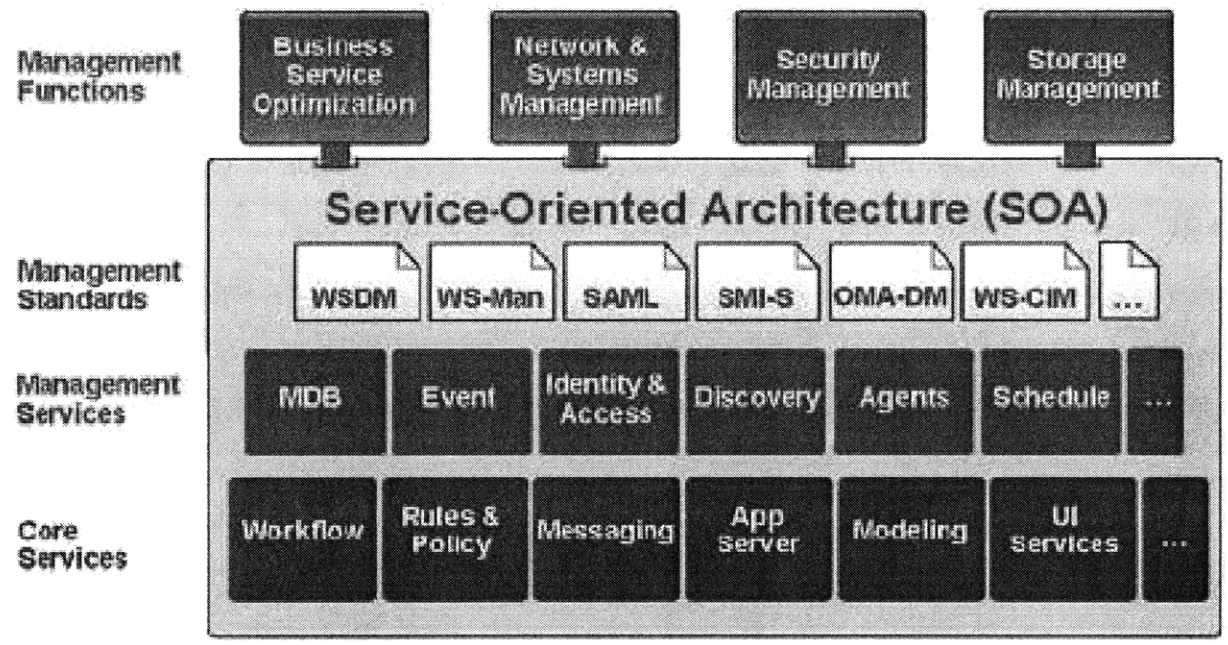


Figure 11 - The firm's integration platform – up-close

In the Management Services layer, the firm provides actual implementation of IT management functions i.e. software components including MDB (Management database that provides a common repository for all configuration data about assets, users and policies), Event (event correlation and presentation for all events raised by the various modules), Identity and Access (user credential management as well as user authentication and authorization in order to secure any asset), Discovery (server side of the service which enables gathering of data about IT assets and users), Agents (client side of the service which enables

reporting back of the current status of an IT asset) and finally Scheduling (services built to allow automated execution).

The EITM architecture utilizes several SOA enabling standards that allow the firm's products to not only be built with ease but also enable its integration into a SOA deployment rather nicely. Some of these standards (see appendix for a brief explanation of each standard) are WSDM, WS-Management, SAML, SMI-S, OMA-DM and WS-CIM. The firm's focus on interoperability and integration through the use of standards is also reflected in its leadership role in authoring and supporting the evolution of the standards.

Customer Segmentation & Value Proposition

Our firm has been in the in the IT management business for over 25 years. Throughout this time, it has sought to increase the breadth of its offerings through development of new products and acquisition of smaller industry players. These strategic acquisitions have been made with a close eye to the customer in an attempt to capture greater portions of their IT spending. This has led to our firm having one of the most extensive arrays of offerings for seekers of integrated IT management solutions. The recent trend toward the concept of service-oriented architecture could prove a win fall to our firm as it is well positioned to capture market share through not only its history of experiences with IT management but also its deployment expertise in the services arena. Further, the firm's EITM vision enables it to provide integrated solutions that have interfaces to make it SOA "plug-n-play". The firm also has individual products that fit into one or more of the SOA management lifecycle needs of a customer. Products such as eTrust® TransactionMinder (built on top of eTrust® SiteMinder) are part of the company's current offerings in the SOA Security management dimension while being part of the EITM vision deliverables. Thus, our firms offerings will help it bond with the customer and in turn help the customer better align their business strategies and processes with their IT management and infrastructure.

We sought to segment the current and potential customers in a variety of ways from how the products were deployed and used in a given vertical to the revenue generated by customers. Through the use of the initial step in the Delta Model integrated framework it became clear that the most logical way to segment the customers was based on the level of current bonding and/or future potential bonding that could be achieved with respect to the deployment and use of our firm's service oriented architecture solutions. To validate this, we further demonstrated the level of bonding as directly correlated to current and future profits. In short, there is a direct correlation between the level of bonding and the long term sustainable level of revenues that can be achieved by concentrating on the different tiers of the customers. The next figure depicts each of the customer segmentation tiers as placed in a given Delta Model triangle strategic position. Each tier represents a different level of customer bonding - Tier 1 being the most bonded, and Tier 5 the least. Long term, the firm should attempt to move customers up the segmentation tiers that have been

identified from Tier 5 towards 4, 3, 2, and 1. With each successive move the customer becomes more and more reliant on the firm, making the cost of switching prohibitive as well as the need to do so undesirable. More discussion on the tiers follows.

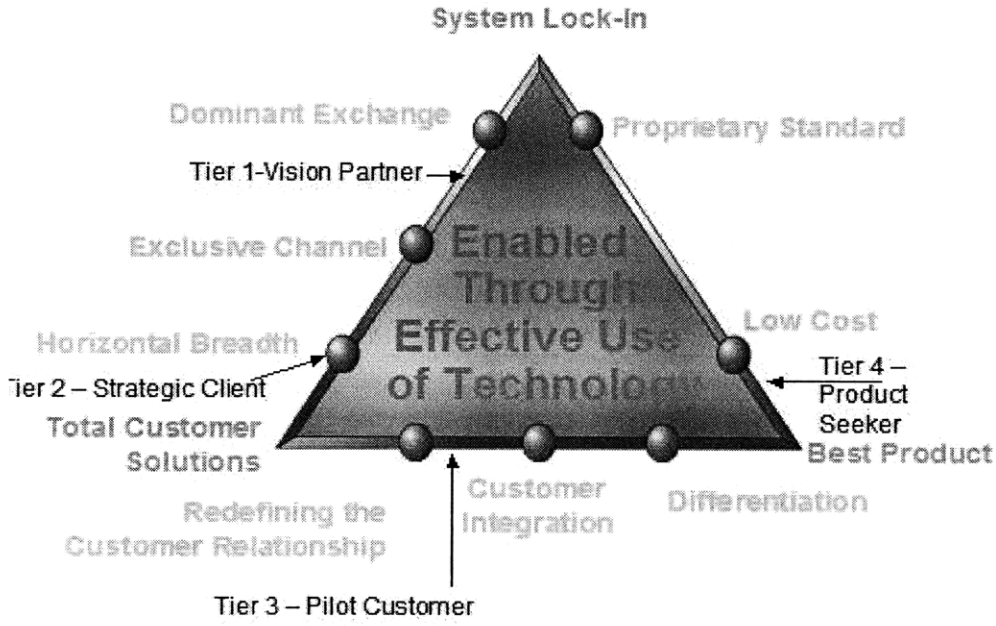


Figure 12 – Positioning of the identified customer segment tiers

The table below outlines each of the customer segmentation tiers along with a brief description.

Summary of the Tiers	
Tier	**Description**
Tier 1 – Vision Partner	The highest level of bonding. Customers in this level have products from all of the firm's business units. Also in this tier the firm is the sole provider of services to the customer. Typically these customers are in the Fortune 250.
Tier 2 – Strategic Partner	The customer has several of the firm's offerings and is typically in the Fortune 500. Services come from a mix of the firm's professional services group and integrator partners.
Tier 3 – Pilot Customer	These customers can come from any size firm but are typically within the Fortune 1000. They are either a firm that can't afford a full-scale integration effort or come from referrals through integrator partners and are currently using products from the firm's competitors. The integrator partners service a large percentage of these sales.
Tier 4 – Product Seeker	These are the least desired tier to the firm. They are customers that only want box sales. This may prove to be a challenge for both the customer and the firm due to the complexity of a SOA implementation.

Table 13 – Summary of the Customer Segmentation Tiers

Tier 1 – Vision Partner

Business Dimension

The very name of the segment speaks volumes about the level at which our firm can bind with the customer. These customers are at the forefront of the IT management and SOA waves. They are in the process of trying to fully realize the benefit of IT through not only SOA but other enterprise infrastructure methodologies as well. These customers have understood the overall alignment of business strategy through the use of IT. Customers in this segment are current large-scale users of many the firms' products and have worked with the firm for a while. Also, at this level it is almost certain that all of the firm's business units are involved in contribution to the customer's IT infrastructure. This level of involvement allows the

customer to have access to the highest levels of management within our firm and allows participation in the firm's customer advisory board. This existing bond is ripe to be strengthened by the further deployment of SOA enabling solutions from our firm. Our firm will become further engrained into the customer's architecture and business practices and able to exert more influence on them. This effort must be driven by the direct to the customer sales and education approach through the use of a dedicated customer account team.

Customer Dimension	Description
Products	EITM capability solutions.
Services	Offerings from the firm's professional services group to provide integration of the firm's products. Education and learning needs assessment as well as enablement
Customer	Fortune 250 • Usually well defined business processes • IT and BPM forward looking • Strong ties with our firm
Channels	Direct to customer • Current customers of the firm • Large scale sales and education effort to move customers toward future vision
End Users	Customer's internal and external users
Complementors	• Third party solutions from partners/vendors that complete the SOA value offering
Unique Competencies	• Large portfolio of offerings from our firm including solutions for i. Business Service Optimization ii. Enterprise Systems Management iii. Storage Management iv. Security Management • Platform independent offerings • Familiar with industry standards and its evolution needed to drive the overall architecture • Availability of a large partner ecosystem

Table 13 - Business Dimension for Tier 1

Several other aspects drive this tier. All current companies in this tier are Fortune 250 companies. The cost of deployment of large scale IT management or SOA solutions is prohibitive for smaller companies due to the complexity and cost of the solutions along with the integration effort. The companies in this tier all have well defined business processes as well as IT management practices that can be integrated under the SOA umbrella. Our firm has unique competencies to drive this tier that include its strong influence and compliance with standards, platform independence, excellent record of product development, integration and its expertise in various technologies are it homegrown or acquired. Of these, our firm's stance towards

platform independence may be one of the strongest drivers in the bonding of a customer towards a SOA solution from us. This agnostic approach allows customers to reutilize legacy applications (even if present on mainframes) they have large vested interests in the new SOA architecture. To implement these large-scale integration efforts, our firm may have to rely on integrators to do some of the 'heavy lifting' i.e. the actual implementation work. In this tier, the primary customer interface will always be with the services arm of our firm in order to ensure a strong direct bond and two-way communication.

Value Proposition

The high value proposition at the heart of this tier is about the relationship that is formed between the firm and the customer as well as the mutual benefits for both parties. This relationship drives efficiency, communication and effectiveness on both sides. The shared experiences of both players facilitate creation of an effective SOA as designed and integrated by our firm. This communication is initiated at the highest levels and continues to occur at all levels of the value chain between both parties. The firm looks to these customers to also help with the vision of the future direction of products offered by the various business units. The value system is driven by a dedicated team on the firm's side comprised of an account team and on the customer's side with its IT organization representatives as well as the business leaders of the teams consuming the various IT resources. These three elements must be in place so the firm is able to consistently understand the gaps that exist in the customer's organization as it relates to obtaining value through alignment of IT with its business objectives. SOA allows for the step integration process even though the system can be designed holistically. As the implementation process is repeated continuously, both parties have available to them the wide array of not only the offerings from the firm to continue working towards the design, but also a variety of approved third party products that are available to complement the firm's offerings in delivering the highest value to the customer.

Value Proposition Element	**Description**
Experiences	• Customer on the firm's Customer Advisory Board which enables their voices to be heard towards product evolution and design • Access to the highest levels of management within the firm.
Value Delivery Systems	• Dedicated team comprised of account team along with members of the professional services team

Value Proposition Element	Description

Value Appropriation	Value gained by the customer
	• Streamlined business processes
	• Better alignment of IT and business goals
	• Increased ROI on IT investments
	• Increased communication and data sharing across the infrastructure and lines of businesses
	• Increased ease of reporting and compliance with such mandates as:
	  ○ Sarbanes Oxley
	  ○ HIPAA
	  ○ Patriot Act
	  ○ Basel II
	Value gained by the firm
	• Deep integration of the firms products into the customer IT environment
	• Increased margins and revenues
	  ○ Reduced cost of sale
	  ○ Recurring revenue through maintenance contracts
	Value gained by all
	• Customer sets the product roadmap jointly with the firm
	• Increased revenues and profits by all

Table 14 – Value Proposition for Tier 1

The customer is able to appropriate the value as it streamlines its overall business processes under the umbrella of single system from one vendor. Additional value is added with the firm's agnostic approach towards platform dependencies allowing the customer to reutilize and integrate applications that have already been developed. The abstracted nature of the SOA deployment also allows for easier reporting. Additionally an open and consistent interface within the customer's infrastructure will aid the customer in the compliance of several of the government mandates that have me in recent years. The firm is able to appropriate value as it increases the depth that it is integrated into the customer's environment. This level of bonding will result in the firm enjoying recurring revenue and reduces the cost of sale. Examined by the Delta model this tier is placed very close to the system lock-in position. The amount of time, energy and money spent on both sides effectively locks out competitors.

Challenges

The customer and the firm will have several challenges to maximize the value appropriation and recognition. For the customer the amount of dependence that it will have on our firm may prove to be a challenge. Since the principle of SOA ties in the various lines of businesses inside the customer organization, there may be

resistance from certain lines of business that have no prior dealings with our firm. Another issue is that of reluctance to rely on a single vendor. An implementation challenge the customer may face stems from the interaction and agreements needed between the various lines of businesses in order to complete the SOA implementation towards overall ROI. Our firm faces a challenge in ensuring that the SOA enabling solutions we supply will indeed scale and perform in a variety of combinations as expected by with the customer.

Tier 2 - Strategic Client

Business Dimension

A strategic customer in Tier 2 has not matured to the point of being a Tier 1 customer by the virtue of not having fully embraced a SOA integration directive. Further, this customer does not have offerings from all of the firm's business units. The customers that are only represented in one or two of the firm's business units have less bonding with the firm as opposed to a customer in Tier 1. Again, due to the cost and complexity of the solution, the target customer company will usually belong to the Fortune 500 group. These customers may rely on core technologies to build and deploy their IT infrastructure from other vendors. However, due to their experience with the firm in certain aspects of IT management that provide a nice overlap with the IT implementation strategy, they will continue to rely on the firm's products and solutions in that area. An example of this is the availability of security management products such as eTrust® TransactionMinder to manage secured access to a given web service. Our firm must make every effort to show the customer the additional value that can be achieved with the inclusion of offerings from the across the board.

The other group of customers in this tier is those who do not have a plan for a current SOA integration plan. The firm should work with these customers and present them with relevant business cases to prove the value of a SOA integration solution. The scale of these potential deployments may prove to be a challenge for the firm due to the limited budgets as well as capability to deploy its own services resources. In these instances the firm will have to look toward its large ecosystem of integrators and partners to aid in the deployment. In this tier, much like in Tier 1, the primary customer interface will be with the firm to ensure a strong direct bond and two-way communication. The firm can capitalize on its unique competencies of

compliance with standards, platform independence, its excellent record of product development and integration. The firm needs to rely on its direct channels to capitalize on this tier's bonding possibilities.

Customer Dimension	Description
Products	A subset of the firm's EITM solutions across multiple capabilities.
Services	Offerings from our firm's professional services group and partners to provide integration of the firm's products.
Potential Customer	Fortune 500 • Usually well defined business processes • IT and BPM forward looking Government
Channels	Direct to customer • Current customers of the firm • Large scale sales and education effort to move customers toward future vision
End Users	Customer's internal and external users
Complementors	Rest of the firm's EITM and SOA enabled offerings Third party solutions from partners/vendors that complete the SOA value offering System Integrators
Unique Competencies	Large Portfolio of offerings from our firm including solutions for • Business service optimization • Enterprise Systems management • Storage management • Security Management Platform independent offerings Familiar with industry standards and its evolution needed to drive the overall architecture Availability of a large partner ecosystem

Table 15 - Business Dimension for Tier 2

Value Proposition

The scale and expected scope of these customers will require a team on the firm's side comprised of an account team and decision makers within the customer's organization much like in Tier 1. However, this tier does not have a dedicated account team from the firm. Account teams that handle this tier are spread across several customers. The experiences of all the parties come into play in delivering value at this tier. The customer expertise with its own business processes will add significant value as they work together with the firm's team on the best solutions. Tier 2 deployments almost by default dictate a step deployment. Each successive step will prove to move the customer toward Tier 1.

Value Proposition Element	Description
Experiences	• Ability to fulfill the SOA vision in a modular fashion.
Value Delivery Systems	• Shared account team with a possible mix of the firm's professional services and systems integrators
Value Appropriation	Value gained by the customer • Streamlined business process • Better alignment of IT and business goals • Increased ROI on IT investments • Increased communication across the infrastructure and lines of businesses • Increased ease of reporting and compliance with such mandates as: o Sarbanes Oxley o HIPAA o Patriot Act o Basel II Value gained by the firm • Better integration of the firm's products into the customer IT environment • Consistent margins and predicted revenues o Reduced cost of sale o Recurring revenue through maintenance contracts • Potential to up sell products from all business units of the firm Value gained by all • Become part of an extended ecosystem • Increased revenues and profits by all

Table 16 - Value Proposition for Tier 2

The customer in this tier will have a value proposition similar to that of Tier 1 customers with a few less distinctions. The customer will lose the one-stop-shop approach as the integrator is added to the mix. This, however, may be overshadowed by the value appropriated by the best of breed approach the customer may take. The firm will still provide the core management between all the customer's applications but other vendors 'best of breed' products may be deployed instead of the firm's product for a given functional aspect of the system. The firm will benefit from the tier by the overall value of the relationship with the customer. Along this line, the firm will not incur the same selling costs as it relies on the integrator to bear the brunt of those efforts. The Delta model position for this tier would move them over to the Total Customer Solution corner with the horizontal breadth of products and services that are being offered. Further, the level of success a customer can achieve is dictated by their business practices as they come in line with their IT investments.

Challenges

The biggest challenge in this tier centers on the difficulty in moving the customer to have the vision to move to Tier 1. If the customer lacks the knowledge of the firm's product lines and the benefits of an integrated environment, the firm must educate the customer. This may be done by proving ROI along the integration path or by providing the customers with business cases they can relate to. This will increase the customer's trust and reliance on the firm.

Tier 3 – Pilot project customer

Business Dimension

Opportunities in tier 3 are limitless. The firm needs to be careful in concentrating on select opportunities to maximize the capture of value. The firm has grouped customers that wish to perform small or pilot projects in this group along with opportunities that are brought to the table by the ecosystem of integrators. Thus this tier also includes any new customers who are either entering the SOA space or using a competitor's products. The firm should carefully choose the ones that will net the biggest value as well as the potential to become strong sustainable relationships from the larger pool of opportunities that are presented in this realm. The integrator partners should handle the rest of the opportunities. This vetting process should be done through a careful examination into the long-term possibilities that each opportunity presents. Once the firm identifies a target opportunity, it should attempt to bond with this customer as much as possible and guide the deployment. In cases where the opportunities are brought by an integrator, the firm should attempt to bond with both the integrator and the end customer. The bonding with the end customer will provide valuable knowledge to the firm as to what the particular industry and customer is trying to do. The bonding with the integrator will ensure future opportunities come form the integrator. All customers in this tier must be shown the benefit of the firm's SOA integration solutions as it impacts their business processes and brings about maximized value and reuse of their IT assets. In instances the customer comes directly to the firm, we feel that once the value of the SOA integration is known the customers will start moving around the Delta Model across the tiers. Throughout this process the firm must help these Tier 3 customers prove value to ensure the success of the pilot project and have the customers become part of Tier 2 or Tier 1. If an

integrator handles the opportunity the possibility of additional bonding may prove to be difficult. The end customer becomes a customer of the integrator. The integrator handles the bulk of the details and communication. The firm must be careful to not impinge on this relationship in fear of damaging its own relationship with the integrator.

Customer Dimension	Description
Products	A subset of the firm's EITM solutions across multiple capabilities.
Services	Offerings from system integrator partners to provide integration of the firm's products.
Customer	Fortune 1000 or Department/ Business Unit within larger firm Integrators Current/Potential customers
Channels	Large scale integrators such as: • Delliote and Touche • Accenture • EDS • Ernst and Young • Others Could also be direct providing the right opportunity for the firm.
End Users	Customer's internal and external users that fall within the scope of the project
Complementors	• Rest of the firm's EITM and SOA enabled offerings • Third party solutions from partners/vendors that complete the SOA value offering • System integrators to perform actual deployment
Unique Competencies	Large Portfolio of offerings from our firm including solutions for • Business service optimization • Enterprise Systems management • Storage management • Security Management Platform independent offerings Familiar with industry standards and its evolution needed to drive the overall architecture Experience of the systems integrators who are well equipped to do overall system designs

Table 17 - Business Dimension for Tier 3

Value Proposition

There is a significant value proposition in this tier. Those opportunities that are identified to be future Tier 2 or Tier 1 candidates allow all of the firm's experiences to be brought forth as it works with them on a micro level with eyes toward the macro level. In these instances the firm's professional services team must provide the customer with a dedicated resource to help design the recipe for success. Careful benchmarks and metrics must be put in place and tracked in order to reinforce the value the solution provides to the business. On the other track of this tier – the one driven by the integrator partner, the same attention should

be provided to the client by the integrator. This will allow the integrator to move them to Tier 2 as all parties reap the benefit of this move. Again in this tier the deployment can be in a step fashion to let the incremental value add drive the project forward in an ever increasing scope. All opportunities in this tier can be viewed as the foot in the door approach to the customer's overall SOA implementation.

Value Proposition Element	Description
Experiences	• Ability to demonstrate the success of the implementation of SOA in a step fashion towards a small project
Value Delivery Systems	• Shared account team with a possible mix of the firm's professional services and systems integrators
Value Appropriation	Value gained by the customer • Increased ROI on a subset of IT investments • Increased communication across the various interdepartmental entities • Increased ease of reporting and compliance with such mandates as: o Sarbanes Oxley o HIPAA o Patriot Act o Basel II Value gained by the firm • Entry of the firm's products into the customer's environment • More potential to up sell other products from the firm • Foot in the door methodology to the rest of the organization Value gained by potential integrator • Increased ability to bond with the customer • Increased scope of influence with the customer Value gained by all • Shared knowledge of the customers business toward future engagements

Table 18 - Value Proposition for Tier 3

The value gained by all parties should be carefully measured and benchmarked. Overall this tier should be very carefully nurtured due to the fact that these opportunities have tremendous up sell. All the customers in this tier would be placed between the Best Product strategic position and the Total Customer Solutions strategic position in the Delta Model. At this tier we are trying to change the customer experience not only with the products and solution from the firm but also with the level of service offered to the customer.

Challenges

The identification of the opportunity may prove to be this tier's biggest obstacle and must be overcome, as it is extremely important for the firm to identify future Tier 2 and Tier 1 customers. These opportunities will

allow for the firm's various SOA offerings to have long term sustainable sales and drive overall business of the other product offerings. The biggest challenge in this tier centers on the difficulty in moving the customer to have the vision towards a SOA strategy and hence move towards Tier 2 and higher. If the customer lacks the knowledge of the firm's product lines and the benefits of a integrated environment, our firm must prove this in incremental successes that happen along the way and the customer increase its trust on the firm. The reduction of the bond between the firm and the customer due to the presence of the integrator may inhibit the mutual learning and information sharing between the firm and the customer. Lastly, the firm will rely on the integrator, if the integrator is at the center of the deal. This in turn will require that the margins be shared by both the integrator and the firm. The majority of the customers in this tier are expected to come from the firm's integration partners such as EDS, Ernst and Young and finally, Deloitte and Touche. These third party complementors provide an expansive opportunity for sales revenue but the bonding is lessened due to their presence between the firm and the customer. In these instances the firm should strive to bond with the integrator and treat them as the customer.

Tier 4 – Product Seeker

Business Dimension

Our firm offers a plethora of products including its SOA solutions. Customers in this segment may never be directly involved with the firm as these products are available through indirect channels. In this tier we will find either companies with IT savvy users that can perform the deployment of the firm's products on their own or customers that are beginning to explore SOA and wish to 'try' a particular product from the firm without engaging it directly. This segment does allow the firm's products to be distributed out to the masses.

Customer Dimension	Description
Products	Unicenter® Web Services Distributed Management, eTrust® Directory, eTrust® TransactionMinder, Unicenter Management for WebSphere, Unicenter Management for WebLogic, CA Wily Web Services Manager.
Services	Very limited. Services needs driven by customer.
Customer	Customers with IT departments that choose their own integration strategy and the products that will enable them to reach their goals
Channels	Indirect sales through VAR's, ESP's etc.
End Users	Customer's internal and external customers
Complementors	Rest of the firm's EITM and SOA enabled offerings Third party solutions from partners/vendors that complete the SOA value

Customer Dimension	Description
	offering System integrators to perform actual deployment
Unique Competencies	Large Portfolio of offerings from our firm including solutions for • Business service optimization • Enterprise Systems management • Storage management • Security Management Platform independent offerings Familiar with industry standards and its evolution needed to drive the overall architecture

Table 19 - Business Dimension for Tier 4

Value Proposition

Our firm is a recognized name in the IT management software industry. This reputation drives the value offered at this tier. The other value driver at this level is the customer's ability to control and drive the integration process. It is our hope that customers move themselves up the tiers as they seek products and advice from the firm. It is also beneficial to the firm when customers in this tier seek the help of the services team as their own integration progresses.

Value Proposition Element	Description
Experiences	Ability to pick and choose the products that best suit project or customer needs
Value Delivery Systems	• Box sales to the customers • Well known brand recognition
Value Appropriation	To the customer • Allows the customer to perform integration on their own terms while obtaining access to the best products To the firm • Low cost sales • Potential sale of services as customers increase integration

Table 20 - Value Proposition for Tier 4

Customers in this tier will be searching for a best value product to minimize up front costs while maximizing features. This will place the customers in this tier in the Best Product/ Low Cost corner of the Delta Model.

Challenges

The biggest challenge in this tier is the lack of visibility to the firm on how its products are utilized by the customers in this tier. The type and spectrum of functionality that the customer expects from the products

may be a challenge for the firm to satisfy without understanding the deployment patterns. The ability of SOA and its nature to mix a variety of technologies and products may prompt the customer into trying the products from the firm. Thus any disconnect between the available functionality and intended usage may lead to customer discontentment and a discrediting of the firm's products. The firm must prevent this through setting clear expectations in advertising and presenting the data to the respective users as to the capabilities of the products. Supporting usage information must be shipped along with detailed documentation when applicable.

Bundle of Competencies

The firm is well positioned to provide technology products and expertise in the rapidly expanding SOA market due to its current leadership in the IT management industry. However it needs to address various tactical as well as strategic issues in order to attain leadership as well as ensure longevity. We have already covered the business unit structure of the firm as well as the EITM vision. In the EITM vision, we covered the three major layers that build upon each other – IT infrastructure, IT Services and Business Processes. Earlier, we also explored how SOA is enabling the EITM vision.

Best Product

In terms of current competencies, let's start at the bottom right corner of our Delta Model triangle i.e. – the Low Cost and Product Differentiation strategic positions. Given that the firm's solutions predominantly address the enterprise software market (with the exception of consumer products in the security - threat management category) cost differentiation is very negligible as compared to competitors such as IBM, HP and BMC. However, efficient operations and the associated cost savings ensure competitive product pricing and resulting revenues. The firm's financial position and market power affords it to make strategic acquisitions to fill voids in its portfolio of offerings. The firm has acquired more than a dozen smaller companies across various IT management areas since 2004 as shown in the figure below.

COMPANY	DATE	DESCRIPTION
XOSoft	Jul-06	Recovery management
Cybernation	May-06	Workload automation and job scheduling
MDY Group International	Jun-06	Records management
Control F1	Jan-06	Support automation
Wily	Mar-06	Web application management
iLumin	Oct-05	Records management
Qurb	Oct-05	Email security
Tiny Software	Jun-05	Firewall security
Niku	Jul-05	IT governance
Concord	Jun-05	network management
eTrust Cleanup	Mar-05	identity and access management
Netegrity	Nov-04	identity and access management
PestPatrol	Aug-04	anti-spyware security
Miramar	Mar-04	Desktop migration management

Source: CA and Jefferies & Company, Inc. equity research

Table 21 – Acquisitions by CA Inc. in the past three years

Another advantage of a well balanced acquisitions strategy is that it enables the firm to fulfill its innovation requirements as it relates to ensuring an end-to-end solution offering instead of just point products. Thus the firm's customers ensure that their favorite IT software vendor is indeed a one stop shop for all IT management needs.

In terms of product differentiation, let's begin by understanding the current SOA product offerings. As seen in the introduction, Web Services are the widely adopted and ubiquitous methodology for enabling SOA based IT infrastructure in an enterprise. The firm's products are both SOA enabled i.e. fit into a larger SOA deployment as well as SOA enabling i.e. point products that address a given SOA lifecycle functionality. The firm's point products address various aspects of managing web services including the areas of security, configuration and monitoring. The *eTrust TransactionMinder* product enables Web Services security through centralized administration as well as policy based access control. This product is built as an add-on (installed on top of) to the *eTrust SiteMinder* product that is the central access management engine for the entire enterprise. It provides content based authentication and SSO (single sign-on) across the enterprise. The *Unicenter WSDM* product provides Web Service monitoring through non-intrusive yet real-time examination of data. It is platform neutral and provides numerous agents/adapters for a variety of Web Services hosts. The company has also partnered with other software providers (business partners) such as Forum Systems, Reactivity, Layer 7 Technologies, Cape Clear, and DataPower (acquired by IBM) to enable seamless integration of firm's products in a customer's SOA environment. The *CA Wily Web Services Manager* product provides capabilities for performance analysis, root cause diagnosis and product monitoring of Web Services. The *eTrust UDDI* product is a fully standards compliant UDDI (Universal Description, Discovery and Integration) directory server that enables Web Service discovery and specification management. Finally the *AllFusion Gen* product provides a wizard based development environment that can enable creation of Web Services interfaces for existing legacy applications across both mainframe as well as distributed platforms. The intent is to integrate these independent components into a complete but standard based SOA management suite that simplifies Web Service management. The EITM vision products across various capabilities are themselves going to be

SOA enabled thereby allowing enterprises to build their IT infrastructure using the principles of SOA. Ensuring that the firm's products adhere to the EITM vision in truly "simplifying" and "unifying" IT will decrease operational costs for its customers and increase ROI. As a small example, consider the fact that all EITM enabled products offer common graphical user interfaces and a single configuration storage repository. Thus, the customer would need to spend fewer resources in training their IT administrator's when additional EITM enabled products are deployed and layered on top of the existing infrastructure. Thus the firm's product base and vision provide a compelling differentiation factor for its current and potential customers. However, there are various changes required to strengthen our firm's position in this strategic position.

Total Customer Solutions

When we start moving towards the bottom left corner of our Delta Model triangle i.e. – the strategic positions encompassing Total Customer Solutions, the picture looks equally promising. In terms of the position of Redefining Customer Experience, we can note the firm's shift to an account engagement model compared to a generic sales model that existed a few years ago. For each customer (depending on tier and scope), the company has a dedicated team with an account manager heading a team of individuals dedicated to that customer. Along with the pre-sales team, this team is able to closely understand the customer's needs and in turn provide valuable information on the range of solutions available to solve the customer's needs. The members of the account team also interact with personnel from other departments such as Services, Support, Product Marketing/Management and Engineering to accomplish various tasks on behalf of the customer. These include a variety of tasks ranging from engaging the appropriate personnel to complete the design and implementation of the firm's products during and after a sales cycle, obtaining resolution to a problem with a product, providing product usage scenarios and urgently needs modifications to the engineering team and finally providing information on the evolution of customer to the product management team. This information directly defines the future product functionality as well as the roadmap. This powerful feedback mechanism ensures that the firm's customers continue to get value in the offerings from the firm. The other aspects of the customer experience include the services organization (CA Technology Services or CATS), CA Technical support, CA Education and other forms of customer care such as product Betas

and User Groups. The services organization provides the firm's customers with valuable services in four areas including – Assessment (analysis of the current IT infrastructure as well as usage situation with or without the firm's products in order to make the correct choices going forward), Design (create the architecture for deploying the solutions in a manner that addresses the need), Implement (actual installation and configuration of the products) and finally Optimization (post implementation tuning of the products to ensure that IT operations are as efficient and effective using the firm's products). This services lifecycle is shown in the next figure adopted from the firm's web site.

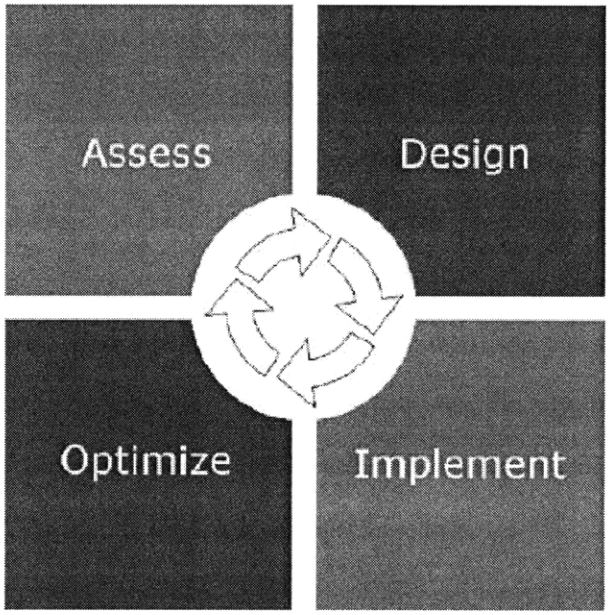


Figure 22 - CA Technology Services Lifecycle

In earlier chapters, we touched upon the ability of the firm to understand and provide appropriate remedies depending on the customer's stage of IT utilization that provided incremental change and thus ROI as well as a staged approach of solving the various issues. This can be further seen in the services team's approach to performing assessments for its customers in the CA Maturity Model as shown in the next figure.

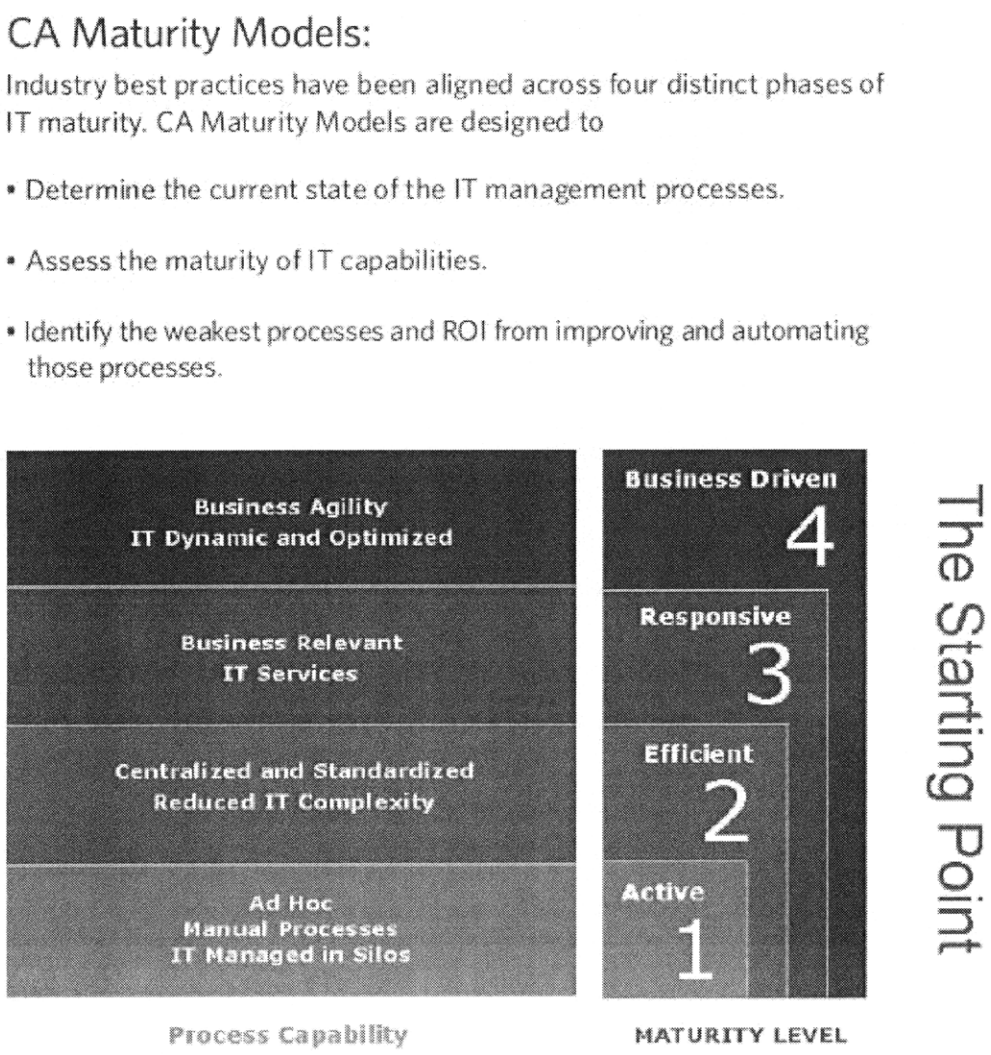


Figure 23 – The firm's maturity model applied to IT assessment and more

In terms of the support organization, the firm offers world class technical support on all its products and is constantly revisiting its support processes in an effort to ensure that all parties obtain the appropriate level of service during the product usage cycle. Thus, personnel in a partner organization or a member of the services team will get the highest priority in a post-sale implementation phase along with current customers that are facing critical production outages due to product failure. Further down the hierarchy would be those that are facing non-critical product issues as well as resellers obtaining support on behalf of their own end customer.

The Learning organization provides world class training on the firm's own products through a variety of delivery methods including classroom/live training (at either the customer's own facility or at various worldwide locations of the firm), electronic learning (web site, media) and blended options that combine the two. The firm's learning services organization also provides knowledge training on various IT industry technical certifications such as CISSP (Information Security Certification Program) and ITIL (IT Infrastructure Library Certification Program) to name a few. Thus, IT professionals from the firm's customers can not only rely on the firm to get their education needs for products that they are require to support but also obtain career enhancing education credentials.

In terms of Horizontal Breadth, consider the firm's portfolio of solutions as explained in the earlier chapters. The individual point products available separately as well the EITM solutions provide for all aspects of SOA management including – provisioning, orchestration, security, monitoring, performance tuning and governance. The firm's acquisition strategy is aimed at ensuring that the focus on breadth and scope of its offerings is not lost and customers can truly depend on the firm's market presence, longevity and staying power to become a one-stop shop. In terms of Customer Integration, we already covered one of the major aspects of service offerings available from the firm. This is the act of ensuring that the customer is indeed utilizing their IT infrastructure in the best possible manner in order to align their business process with their IT investments. This exercise needs to be repeated frequently (depending on the size of the IT base) by the customer so as to ensure optimal operational ability as well as keeping up with the evolution of technology. However, instead of having to perform this exercise on their own, it can instead rely on the personnel from the services organization of the firm in order to obtain expert advice in a timely manner. Similarly, the customer can also rely on the knowledge and expertise of the services personnel to provide expedited installation and deployment of the firm's solutions along with optimization to ensure maximum value appropriation. The services arm of the firm can also ensure that the customer is able to take advantage of existing relationships with its systems integrator partners such as Ernst & Young in completing subsets or entire set of implementation tasks. This is critical due to the fact that the firm does not have a large services organization like some of its competitors. An example of this is IBM Global Services which is responsible for a wide array of services including IT software/hardware integration, training, custom

application development as well as running entire IT departments. Would a lack of this capability affect the firm adversely? Not necessarily. Considering the fact that the firm's partners could perform each of the functions mentioned earlier, it is in the firm's interests to ensure a seamless or virtual presence across all customer needs. In some cases, the firm's own partners and system integrators are the very same parties advising its largest customers in terms of technology trends, new product adoption etc. Leveraging this three-way relationship ensures the customer's needs is constantly getting addressed by an ecosystem of players.

System Lock-In

Let's now discuss the northern tip of the Delta Model triangle i.e. the area of System Lock-In encompassing the strategic positions of Restricted Access, Dominant Exchange and Proprietary Standard. Even though there are no specific factors affecting Restricted Access, we can mention the competitive position of the firm. As the largest software vendor focused solely on IT management, the firm has one of the most extensive lines of systems and IT management solutions. We mentioned that the low cost factor was not a significant contributor to the firm's strategy. However, in spite of not having a low entry point in terms of cost, the solutions get affordable in larger deployments. Further, this is the norm with most customer scenarios. With EITM, the firm is able to provide a vision on how SOA and the firm's product evolution overlap. It is a large firm with a global presence and is able to provide one stop shopping for all IT needs. The only other global company that equals the firm in its capabilities is IBM. In terms of Restricted Access and Proprietary Standard, the firm's products such as Unicenter, SiteMinder and Wily have become the global standards for the respective functionality they offer. Product deployment cycles can take up to several months or a year depending on the scope and number of users affected. Given the nature of enterprise class software deployments, the customer is not able to remove these solutions due to the prohibitive costs and time required to perform product switching. Further, the customer is also able to take advantage of add-on solutions from the firm's own services arm as well as other third party vendors. Another significant contributor of success is that of interoperability with a variety of platforms and servers.

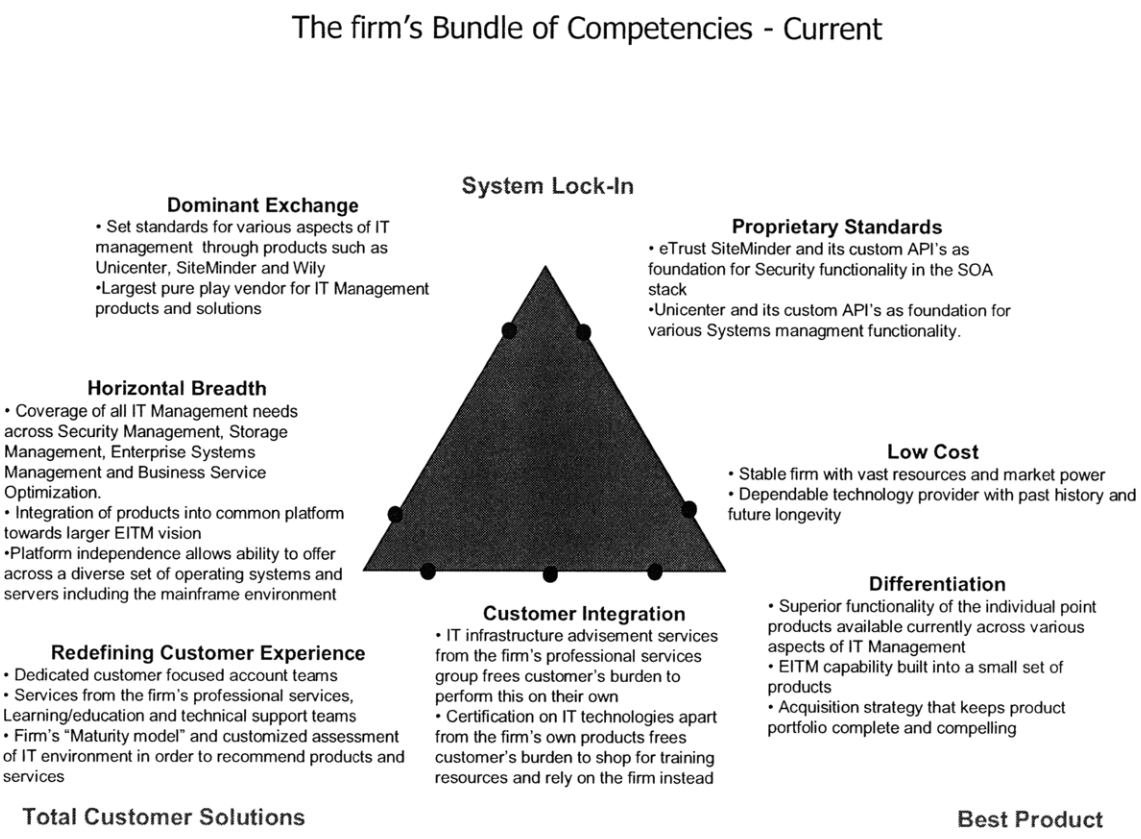


Figure 24 - The firm's current bundle of competencies

Desired bundle of competencies

In terms of the desired bundle of competencies across the three strategic positions in the Delta Model, let's start with the Best Product position. In spite of the fact that the products themselves do not easily lend themselves to a low cost position, the firm can reduce costs and pass the savings onto the customer in an attempt to increase competitiveness at that position. This can be achieved by taking greater advantage of the firm's offshore development centers and transferring as many functions related to product development and sustaining to the offshore teams. This would also enable local teams to concentrate on new product innovation thereby bringing about greater differentiation. The EITM capability has to be extended across every product of the firm by use of a common integration platform. This should be performed by the firm in an expedited manner in order to capture market share. For the customer, the use of common interfaces and

systems across various aspects of IT Management through the EITM vision will reduce TCO (Total Cost of Ownership) of the product and improve productivity. In terms of the changed desired in the firm towards a Total Customer Solutions strategic position, the firm should add capability to perform advisement on business process reengineering through extensive knowledge of a given vertical. Secondarily, towards redefining the customer experience, the firm should increase the ease of self deployment and usability of its solutions in order to decrease the costs incurred by the customer as well as the time taken to complete implementations. Lastly, the firm needs to dramatically increase the strength of its professional services team in order to capture a greater share of the product implementation and integration revenues. Finally, in the third strategic position of System Lock-In, the firm needs to push EITM as the desired means to the SOA end. The company should ensure that its messaging of the EITM vision is clear and advances it towards becoming the defacto standard.

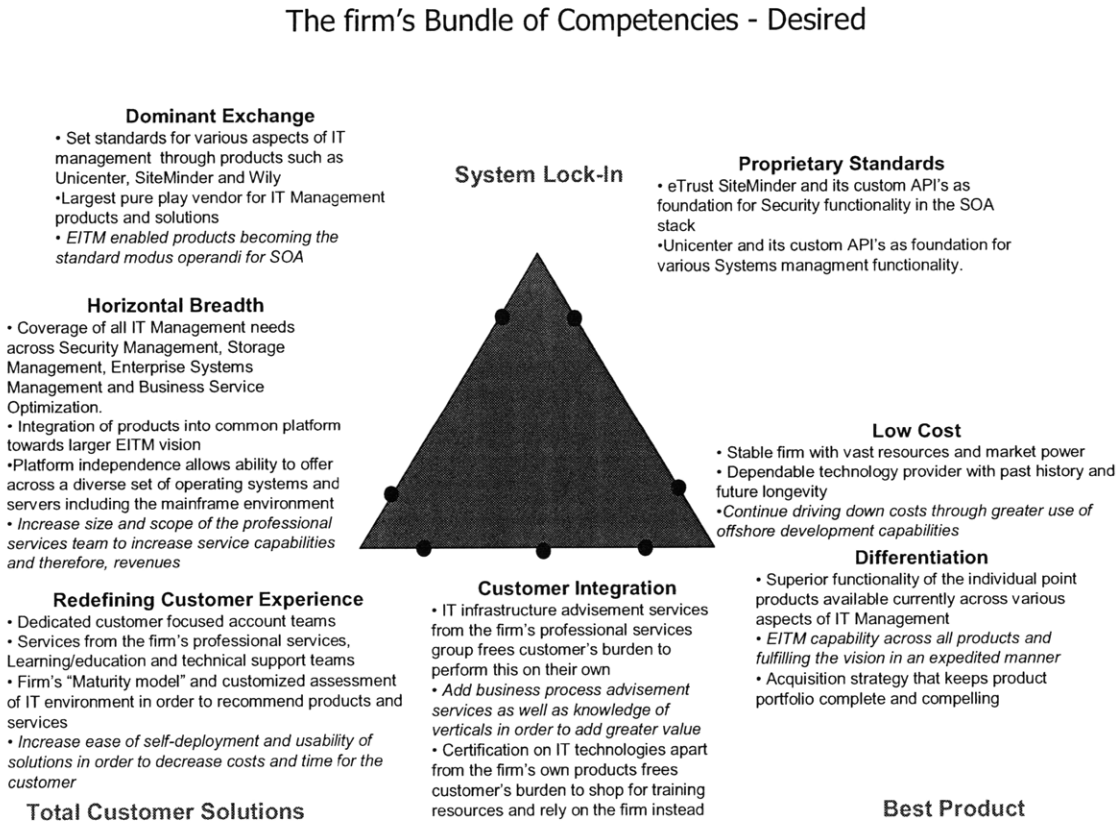


Figure 25 -The firm's desired bundle of competencies

Mission of the Business

In defining the mission of the business we must first understand our firm's current focus across various business areas also referred to as "scopes". These scopes have been identified as defining the baseline understanding of what the company is doing currently, where the company needs to improve on or diminish focus and what must be done to forge a strategy going forward. This current list of focuses will help with identification of what needs should be developed to align the company's future strategy across these scopes. The table shown below will help the reader understand the scope ratings that will be explained in greater detail in the rest of this chapter. This chapter begins with a breakdown of the current situation along with movement towards the future direction of the company. The time horizon for future scopes is usually 2-3 years. We feel these changes must take place in that time parameter in order to expand market share and continue warding off threats from competitors such as IBM, HP, Oracle and Microsoft who are vying for a share of the very same market.

Scope	Priority	The Product, Consumer, Channel or Geographical Location...
Existing	--	... is being divested or exited from
	-	... will be assigned to a low level of importance
	E	... will continue to receive the current level of resources
	+	... is assigned a high level of importance and additional resources to achieve a better competitive position
	++	... is assigned the highest level of importance and the resources needed to achieve as outstanding a competitive position as possible.
New	--	... is very tentatively considered for business activity
	-	... is tentatively considered for business activity
	E	... will receive the necessary level of resources
	+	... will be assigned a high level of importance and the necessary resources to achieve a strong competitive position
	++	... will be assigned the highest level of importance and the resources needed to achieve as outstanding a competitive position as possible

Figure 26 – Priority Assessment Scale for Business Scope

Product Scope

The real strength of the firm is derived from its broad product base. These products are primarily centered on enabling a customer to maximize their investment in their IT infrastructure, and reducing the total cost of ownership. The Service Oriented Architectures (SOA) concept of aligning the mission of the business trough the use of its IT investment makes the firm's EITM vision a natural fit in the overall IT market.

When examining the SOA offerings from a point product view i.e. stand alone products that satisfy a given functional need, the firm has various products that fall within the SOA Management space. eTrust TransactionMinder provides secured access to web services by inspecting the contents of the data provided by service consumers. It utilizes centralized security policies for authentication, authorization, audit through it layered placement on top of eTrust SiteMinder. The eTrust SiteMinder product is an industry recognized leader in providing user authentication and controlled access to any asset within an enterprise's IT environment including web applications and portals. The TransactionMinder product will be replaced by a more comprehensive suite as seen shortly.

The Unicenter Web Services Distributed Management (WSDM) product provides monitoring of web services within a SOA environment. The setup comprises of one or more clients that act as agents and pass information about the health of the web service to a back-end server. Along with the Wiley performance analysis product, the firm provides a sound platform for SOA Management – Security, Monitoring and Availability. To add further strength to its offering the firm always follows a platform neutral approach. Through the AllFusion Gen product, it provides support for conversion of existing legacy applications currently executing on mainframe environments into web services. This bodes very well with the existing and new customers in the Fortune 500 that have large investments in mainframe environments.

Existing Product Scope	- -	-	E	+	+ +
EITM Solutions					X
eTrust Transaction Minder	X				
eTrust SiteMinder			X		

Existing Product Scope	- -	-	E	+	+ +
Unicenter Web Services Distributed Management (WSDM)			X		
Wiley Web Services Manager				X	
eTrust UDDI		X			
AllFusion Gen		X			

The next phase of the products to be delivered by the firm is very clear - To expand upon the existing SOA offering and move towards the greater EITM vision. Fist, we need to ensure the EITM capability is added into all of the products in realizing the vision. Next, we need to create a unified suite product in the strongest area of SOA functionality that we have today – namely SOA Management. Finally, the firm must increase the availability of agents for the WSDM product. This may prove a challenge due to the competing priorities. However, with careful analysis and selection of target servers (list of enterprise class servers that need to be monitored) the firm can ensure development of new components that are widely needed in various vertical markets and in turn provide maximum return. This will allow the firm's knowledge to grow and help it bond closer to the customer. The team had also considered 'breaking the mold' of current customer targets and offering a light SOA management solution that appealed to small and medium businesses. But this idea was dropped due to the nature of the customer base and the implementation process.

New Product Scope	- -	-	E	+	+ +
SOA Management Suite					X
Unicenter WSDM Agents				X	

Challenges from the changes in the Product Scope

The major challenge to the product scope will be ensuring the expedited completion of adding the EITM capability to all the firm's products through the use of the Common Integration platform as well as applicable agents such as EITM Connectors and WSDM Agents. Another challenge is that of the acceptance of this vision among our partners so that they are able to provide products coexist seamlessly with ours within a unified IT environment thereby truly maximizing value for our customers.

Service Scope

The firm has a fair level of services scope with respect to its ability to deploy IT management systems at a customer's location. It is focused on enabling the product to fit seamlessly into a SOA enabled IT environment. Examining the current offerings of the various services organizations, the current strength of close to 1300 professionals worldwide should be substantially augmented if the firm is going to make greater progress on its ability to attract customers towards its SOA offering from that of its major rivals such as IBM. The current reliance on systems integrators at the middle tiers inhibits the firm's ability to appropriate the margins of the relationship as it distances the firm from the actual customer. The staff in the technical support team as well as the learning team will have to scale to match any increase in the professional services team strength as the firm attempts to get more revenues from its service offerings.

Existing Services Scope	- -	-	E	+	+ +
Professional Services				X	
Learning/Education			X		
Technical Support			X		

Looking forward the firm will need to add to its service offerings to capitalize on the SOA movement from the perspective of having greater knowledge in the customer's industry. Since the concept of SOA utilizes IT to integrate processes and work flows across various lines of businesses, it is imperative that the firm understand the business of the customer in a more complete fashion. The firm's business process reengineering team can work with customers on their business process in order to optimize their IT investments and deploy SOA as efficiently as possible. Offering custom WSDM Agent or EITM Connector development allows the customer to tailor the firm's products in their environments. This interaction also gives valuable insight into what the customer is attempting to accomplish and provides the firm with a wealth of information about the evolution of a given industry/vertical.

New Services Scope	- -	-	E	+	+ +
Business Process Reengineering across verticals				X	

Challenges from the changes in the Services Scope

The firm's focus on being a products company will result in a challenge as the company moves towards the vision of bonding closer with customers through services. This can only be done with an expanded professional services force capable of meeting the ever changing needs of the customer. This transition to a service orientation will not only challenge the internal dynamics of the company but may also threaten the system integrator channel if not managed correctly.

Customer Scope

The current customer scope for the firm makes it fairly hard to delineate their targets. The firm goes about typically targeting the biggest 'trophies' spread across various levels of the Fortune 1000 group. The team feels these marquis accounts are very valuable and the firm should maintain its efforts in this target market. But it should do so in a fashion that increases its focus into subsets within this large group. The reason to maintain focus in this highly contested market is due to the fact that the cost of acquisition is high and these accounts act as valuable successes stories to our future targets. We will continue to maintain our efforts to attract customers in the SMB segment (Small and Medium Businesses). When these smaller customers are able to view our firm's role as the preferred supplier to the biggest enterprises in the world, they are also naturally drawn to our firm.

Existing Customer Scope	- -	-	E	+	+ +
Large customers spread across Fortune 1000		X			
SMB (Small and Medium Business)			X		
Government				X	

The reliance on the system integrators as discussed previously should be carefully balanced as the firm continues to form a direct bond with its increasing customer base. Various government agencies are already attractive to the firm, but the current multi silo structure of these organizations makes it somewhat difficult to engage them. There is a large initiative called E-GOV that may change how the various government

agencies interact with its users as well as with each other. This initiative is the government's attempt to standardize platforms and applications across the agencies. Our firm should maintain a close watch on this initiative and constantly assess its proposed move into the segment and thus create a stronger presence in the government sector.

Deciding the future customer scope is the most critical piece for our firm. All other decisions and actions hinge on this scope. After careful analysis we feel that the best way to increase the market share and continue building on the momentum of our current customers is to perform customer segmentation that is already described in detail in earlier chapters.

New Customer Scope	- -	-	E	+	+ +
Tier 1 – Vision Partner			X		
Tier 2 – Strategic Partner			X		
Tier 3 – Pilot Customer			X		
Tier 4 – Product Seeker			X		

Challenges from the changes in the Customer Scope

As the firm transitions to more segmented approach of its customer base, it should be careful to ensure that it does not alienate or exclude any potential sale. Further the existing customers who might potentially fall into a segment that now calls for a differentiated approach to managing their needs should feel a positive effect of this change.

End User Scope

The firm's focus on the sale of enterprise-class middleware software narrows down its customer scope to businesses, integrators and government agencies. As is natural in the enterprise software business, the ultimate end user is a person utilizing the various software and systems within the customer's IT infrastructure. This end user can be an IT Administrator, an employee, a partner or the customer's customer. As such the firm does not link to the end user directly.

Existing/New End User Scope	- -	-	E	+	+ +
N/A					

Challenges from the changes in the End-User Scope

N/A

Channel Scope

The firm's products currently have multiple channels to the customer. However, the firm continues to heavily rely on the two that provide the best opportunity for revenues. Customers identified as current Tier 1 and Tier 2 are exclusively handled by direct channels. Tier 1 customers have dedicated account teams in place that are typically working with them on a daily basis. These customers also have a direct link back to the highest levels of the firm as they participate on the firm's customer advisory board and help with the definition of the future direction of the firm's products that they have come to heavily rely on. System Integrators also prove to be a valuable channel to market the firm's products. These System Integrators have considerably more visibility into the market and this channel should be maintained to keep the revenue stream flowing. However, the firm must try to increase its direct channel. The rational behind this was discussed in the Services scope section. By cutting out the middleman, the firm will appropriate higher margins and increase bonding. The indirect channel includes Value Added Resellers (VAR) which should be given a higher level of support and help by the firm than currently receiving allowing them to cover a larger number of the lower tier customers.

Existing/New Channel Scope	- -	-	E	+	+ +
Direct					X
System Integrators			X		
Indirect				X	

Challenges from the changes in the Channel Scope

There are no new channels for the firm to exploit. The direct channel is the most important one and will continue to play its pivotal role. The challenge of this channel continues to be high costs. One of the significant challenges in the channel scope may be preserving the relationship with the system integrators

who not only provide implementation services, but are a sales conduit to the customer. While the firm continues to grow its services group, these partners might be threatened as a result of their displacement in regards to some of the tasks previously performed by them. The firm has to ensure that it continues to pay close attention to its indirect channel and ensure the success of this mechanism.

Complementors Scope

The company's broad line of product offerings from its various business units allows cross selling of additional products that in turn enhance the value of the firm's SOA offering. The firm will continue to improve and increase its product portfolio through in-house development and acquisitions. Adding to the attractiveness of the firm's SOA offerings are the many third party vendors who provide additional software. The firm's relationships with system integrators to provide additional services to customers should be maintained.

Existing/New Complementors Scope	- -	-	E	+	+ +
Systems Integrators		X			
The firm's many product offerings			X		
Third Party Solutions				X	

Challenges from the changes in the Complementor Scope

The firm should continue to seek third party vendors who provide the highest quality and function rich products that enhance the value of the firm's own offerings. As mentioned earlier, care should be taken with ensuring that system integrator's role in selling and servicing customers do not get affected in any manner. Further, the entire partner ecosystem should believe in the firm's ability to follow through on the EITM vision.

Geographic Scope

Even though the company has a global presence in the IT management market, the bulk of its revenue is currently derived from the North American, Western European and Japanese markets. This is primarily due to the nature of the location of the world's largest companies. The mentality to hunt big game has proven successful in the past and concentrated many of the firm's customers in the above mentioned geographies.

The proposed increase in customer scope will allow the firm to reach a broader target audience seeking SOA solutions in the very same core markets. As the firm gains expertise in the SOA market, it must increase its efforts into emerging economies in the BRIC zone as well as other regions such as Latin America.

Existing/New Geographic Scope	- -	-	E	+	+ +
USA					X
Canada					X
Western Europe			X		
Japan				X	
South East Asia			X		
Oceania			X		
Eastern Europe		X			
Brazil			X		
Russia		X			
India				X	
China					X
Other	X				

Challenges from the changes in the Geographic Scope

As stated above the firm is one of the largest global enterprises. However the current customer focus and revenue stream is primarily from North America, Western Europe and Japan. The challenge to the firm is that of ensuring adequate (if not greater) attention is paid to customers in various emerging markets and providing localized products to these geographies without deteriorating the strong links with the traditional geographies.

Unique Competencies

The firm's thirty-year history and a legacy of leadership in the IT Management software industry is the biggest competency that it possesses. The EITM vision is a byproduct of this leadership. Its largest customers provide a significant portion of the revenues and a close alignment with these large organizations has enabled the firm to present itself as the benchmark of IT management worldwide. The firm has also had

a long tradition of platform independence and is thus able to offer solutions across multiple platforms. The firm's close ties with the mainframe as a result of being founded in the early 70's continues to maintain its legacy as a mainframe supplier while this same legacy has also led to the ability to obtain large deals in the non-mainframe product space. This is a result of already having a foot in the door of customers that have large investments in legacy applications on mainframes and are switching over to distributed computing. It is able to increase its portfolio through continuous acquisition of smaller companies in order to maintain best of breed leadership. In the recent past the company has gained leadership positions in security, portfolio management and network management through the acquisition of companies such as Netegrity, Niku, and Concorde Communications respectively. Through the purchase of Netegrity (the makers of Siteminder), the firm succeeded in becoming a premier name in access management that is critical to the overall SOA architecture.

The firm also has other advantages that may not be entirely unique but have been extremely valuable to its growth and competitiveness. Its offshore development center in India allows it to execute projects at significantly lower costs. Another competency that bears mentioning is its relationship with some of the most recognized and trusted off-shoring companies such as Satyam Infosys and Wipro. Due to the size and scope of IT Management in general, the firm should continue to partner with various system integrators.

Existing/New Unique Competencies	- -	-	E	+	+ +
EITM Vision					X
Gain expertise in IT Management disciplines through acquisition			X		
Multi-platform support			X		
Offshore Development Centers				X	
System integrator partnerships			X		

Challenges from the changes in Unique Competencies

The main challenge for the from this perspective is that of ensuring that it follows through on its EITM vision and is able to provide its customers with the SOA enabling as well as SOA enabled products that has the potential to make it an household name in the market.

The Strategic Agenda

This section begins to define the Strategic Agenda for the firm on a high level and defines the strategic thrusts that the team feels the firm must concentrate on to move into the future and capture market share. Defining these strategic thrusts will allow the firm to refocus its efforts into specific areas.

This systematic approach to defining the mission consists of several key elements for each strategic thrust. These thrusts will be centered on several areas:

- The parties needed to oversee the mission will list out the key participants and contributors within the firm that must buy into and actively participate and single out a champion to lead the effort.
- The key factors for the management of the process and targets.
- The key milestones and projected dates.
- The resources required to achieve the strategic thrusts and meet the proposed milestones.
- A statement of benefits in pursuing the strategic thrust.
- An opinion of how comprehensive the firm must develop this thrust.
- An opinion of how much of a stretch this strategic thrust is to the firm.
- How easy is it for the firm to monitor the process
- The vulnerability of competitors to appropriate the firm's competitive advantage if the firm pursues a given strategic thrust.

		Security			Storage			ESM			BSO			CSG				
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Business Process	Performance Metrics
Solidify Offerings																		
1	Define and build the SOA Security Management Offerings.	1	2														CT/I	Have product ready 15 month from start
2	Define and build the SOA Business Services Optimization (BSO) Offerings										1	2					CT/I	Have product ready 15 month from start
3	Define and build the SOA Storage Management Offerings				1	2											CT/I	Have product ready 15 month from start
4	Define and Build the SOA Enterprise Service Management (ESM) Offerings							1	2								CT/I	Have product ready 15 month from start
5	Develop Common Integration Platform													1	2		I	Have Interface ready in 12 months
Build Internal Capabilities																		
6	Hire personnel and develop technical capabilities in the engineering organization.	2			2			2			2			1			OE	Increase Number of engineers and tighten delivery times
7	Hire personnel and develop technical capabilities in the various services organizations including support and technical services.		2	2		2	2		2	1		2	2				OE	Increase Number of Service Engagements and Decrease Deployment Time
8	Become an Integral Part of the Standards Committee	2			2			2			2			1			I	Become a lead Member of the Standards committee
9	Build and Educate Sales Force on SOA		2			2			2			2		1			OE	Increase Number of Sales
10	Build Internal SOA Committee	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	I/OE	Increase Number of internal reviews and cross functional meetings

		Security			Storage			ESM			BSO			CSG				
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Business Process	Performance Metrics
Build Market Share																		
11	Increase SOA enabled and SOA enabling solution sales		2	2		3	3		1	2		3	3				CT	Increase Number of Service Engagements and Decrease Deployment Time
12	Increase education of partners on the firm's products towards deploying SOA based infrastructure	2	2		3	3			2	1	2	2					OE	Increase Number of Service Engagements and Decrease Deployment Time
13	Build External Credibility in SOA Space	2	2		3	3		2	1		3	3					CT	Increased participation in conferences and Industry Presence (analyst reports)
	Key																	
	Level 1 will be the champion of the thrust within the firm																	
	Level 2 will be the parties that are integral to the thrust																	
	Level 3 will include the interested parties within the firm																	

Table 27 – Strategic Agenda of the firm

Solidify the Offerings

At the core of the strategic thrusts lies the need for the firm to have offerings from each of its business units. This will allow for the firm to solidify its bond with customers by delivering a product the customer finds of value. With all the Business Units in line with the firm's overall SOA vision the potential to up sell into each of the customer tiers grows dramatically. It is the long-term vision of the firm to displace all other vendors that compete directly with it at the customer's location. This can only be done if the firm has the offerings, from either partnerships or internally, to meet the needs of the customer. This section will take you through the steps the firm must perform in order to solidify its offerings in the management of the customers SOA enterprise.

Define and build the SOA Security Management Offerings.

One of the strongest areas of the firm currently, is also is a central player in a SOA implementation. That area is the firm's strong offering in the security segment. This is a product that must be rolled out quickly and decisively while being complaint with SOA standards. Since this business unit is a central player in almost all of Tier 1 and 2 customers, SOA compliance in this area will allow the firm to maintain a tight if not tighter bond with the customer.

Name:	Define and build the SOA Security Management Offerings.
Description:	Modify the existing security product suite
Responsible Manager:	Security Business Unit Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant security products Up
	Upgrades from previous versions of security products Up
	Sales of complementary products up through Security BU
First Milestone Description:	Release of SOA compliant version of the firm's Security Suite
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to port the products over to a SOA compliant platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of development of the SOA compliant products.

Define and build the SOA Business Services Optimization (BSO) Offerings

The next area to be addressed is to add Web services capabilities to the firm's product and portfolio management products. This will allow these products to interface into the SOA architecture and talk across the Enterprise Service Bus with standards based products and the rest of the firm's SOA products.

Name:	Define and build the SOA Business Services Optimization (BSO) Offerings
Description:	Update and modify the products from the Business Services Optimization BU to comply with SOA standards and ensure the products interacts/interface with the firm's other SOA offerings though web services interfaces.
Responsible Manager:	The BSO unit Manager
Other Key Participants:	The BSO Marketing and Sales Manager
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management Control and Targets:	Sales of SOA Compliant Products from the BU Up
	Upgrades from previous versions of products Up
	Sales of complementary products up through BSO BU
First Milestone Description:	Release of the BU's SOA compliant products
First Milestone Date:	15 months from inception of strategy
Resources Required:	Identify and dedicated a team to port the products over to SOA compliant platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of development of the SOA compliant products.

Define and build the SOA Storage Management Offerings

The firm has acquired a product suite from iLumin that combined with Brightstor drives the firm's Storage Management Business Unit. These products are important to the overall SOA deployment but less so than products from the Security and ESM BU therefore we will not dedicate as many resources in this BU to bringing the products into SOA compliance.

Name:	Define and build the SOA Storage Management Offerings.
Description:	Update and modify the products from the Business Services BU to comply with SOA standards and ensure the products interacts/interface with the firm's other SOA offerings through web services interfaces.
Responsible Manager:	The Storage Management Business Unit Manager
Other Key Participants:	The Storage Management Marketing and Sales Manager
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management Control and Targets:	Sales of SOA Compliant Products from the BU up
	Upgrades from previous versions of products up
	Sales of complementary products up through Storage Management BU
First Milestone Description:	Release of the BU's SOA compliant products
First Milestone Date:	15 months from inception of strategy
Resources Required:	Identify and dedicated a team to port the products over to SOA compliant platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better Understanding of the customer's needs with SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of development of the SOA compliant products.

Define and Build the SOA Enterprise Service Management (ESM) Offerings

The firm's most recognizable product suite comes from the Enterprise Business unit in the form of the Unicenter family of products. This family of products drives a significant portion of the firm's revenues. This does provide the firm an outstanding opportunity to up sell its other products as this BU's family of products provides a base for many customer or potential customer's IT infrastructure. With this in mind this is the most significant area the firm must focus on in getting the products into SOA compliance.

Name:	Define and Build the SOA Enterprise Service Management (ESM) Offerings
Description:	Update and modify the family of products from the Enterprise Services BU to comply with SOA standards and ensure the products interacts/interface with the firm's other SOA offerings through web services interfaces
Responsible Manager:	The ESM Business Unit Manager
Other Key Participants:	The ESM Marketing and Sales Manager
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management Control and Targets:	Sales of SOA Compliant Products from the BU up
	Upgrades from previous versions of products up
	Sales of complementary products up through Enterprise BU
First Milestone Description:	Release of the BU's main product in a SOA compliant platform
First Milestone Date:	15 months from inception of strategy
Resources Required:	Identify and dedicated a team to port the products over to SOA compliant platform.
	Account managers to assess customer's needs
Statement of Benefits:	Increased customer bonding
	Increased Sales volume
	Better Understanding of the customer's needs with SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of development of the SOA compliant products.

Develop a Common Interface Platform

The firm must invest in developing a common interface platform that all its SOA compliant products can plug into. Without this interface the firm would have to rely on a third party to provide the backbone or central piece of a SOA development.

Name:	Develop a Common Interface Platform
Description:	The common interface platform needs to be developed so all the firm's products can talk with each other and other SOA compliant.
Responsible Manager:	The Common Services Business Unit Manager
Other Key Participants:	The ESM BU Manager
	The Security BU Manager
	The Storage BU Manager
	The BSO BU Manager
Other Important Contributors:	The SOA standards committee
Key indicators for Management Control and Targets:	Sales of SOA Compliant Products from all BU's up
	Upgrades from previous versions of products up
	Sales of complementary products up through all BU's
First Milestone Description:	Release of the common platform to all BU's
First Milestone Date:	12 months from inception of strategy
Resources Required:	Identify and dedicated a team to port the products over to SOA compliant platform.
	Account managers to assess customer's needs
Statement of Benefits:	Increased customer bonding
	Increased Sales volume
	Better Understanding of the customer's needs with SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of development of the SOA compliant products.

Build Internal Capabilities

The firm has extensive capabilities in the development and deployment of enterprise class software globally. The challenge comes from the issue that SOA is in its infancy and has not had widespread acceptance. Therefore the firm does not have the capabilities at this time to capture and deploy to this segment. This internal building is essential and must be done in tandem with the solidification of offerings as mentioned above. Once these capabilities are gained they must also be continually updated as the SOA standards are further developed.

Hire personnel and develop technical capabilities in the engineering organization.

This may seem to be a statement of the obvious as all software development companies have to continually update their capabilities but the talent pool for engineers who possess SOA is limited at this time. The firm will have to expend significant resources, internal and external, to gain this capability.

Name:	Hire personnel and develop technical capabilities in the engineering organization
Description	Train and hire the engineers needed to port the firm's products over to SOA compliant platforms
Responsible Manager:	The Common Services Business Unit Engineering Manager
Other Key Participants:	All other Business Unit Engineering Managers
Other Important Contributors:	The firm's offshore engineering manager and the HR Manager
Key indicators for Management Control and Targets:	Meeting of the target dates set for SOA compliance of the products. Quarterly reviews of these initiatives to ensure they are on track and positive NPV projects.
First Milestone Description:	Meet target staffing rates at 50% of each BU's delivery of product timeline.
First Milestone Date:	7 months from start of strategy
Resources Required:	HR and engineering managers to oversee the training and hiring of the required personnel. The commitment of upper management to staff the departments with the personnel needed. The change of priorities of each Business unit to away from new products and focus on bringing the existing products into SOA compliance.
Statement of Benefits:	Increased area of expertise for the firm SOA compliant products at milestones Able to meet the customer's needs in a more timely fashion.
Vulnerabilities:	The vulnerability in this area lies in the possibility of other companies luring away the resources the firm hires and trains.

Hire personnel and develop technical capabilities in the various services organizations including support and technical services.

The firm focuses extensively on product development and the sales of these products. The professional services division makes up a small percentage of the firm's overall workforce. This is an area the team feels the firm can capture revenues if it shifts its business model to include a larger service presence. This is why this strategic thrust is critical to the overall success of the firm's strategy.

Name:	Hire personnel and develop technical capabilities in the various services organizations including support and technical services.
Description:	Train and hire the engineers and other service personnel to work with the customers and potential customers in the deployment and support of SOA.
Responsible Manager:	The ESM Business Unit Service Manager
Other Key Participants:	All other Business Unit Service Managers
Other Important Contributors:	The firm's HR Manager and upper management to realign the focus of the firm toward services.
Key indicators for Management Control and Targets:	Increase service dollars and engagements. Quickly defining what the firm can offer and ultimately want to offer. Customer recognition of the new service offering of the firm. Meeting of the deadlines set by the account managers and the customers for the service deployments that require the firm's professional services division. Quarterly reviews of these initiatives to ensure they are on track and positive NPV projects.
First Milestone Description:	Development of the professional services division to be proficient in SOA deployments.
First Milestone Date:	12 months from start of strategy
Resources Required:	HR and service managers to oversee the training and hiring of the required personnel. The commitment of upper management to shift the business model and the fiscal resources to do so.
Statement of Benefits:	Increase scope of the firm to generate revenue. Increase first party bonding with the customers to understand their needs better. Increased area of expertise for the firm. Able to meet the customer's needs without the use of third party vendors.
Vulnerabilities:	The vulnerability in this area is large and diverse. The training of the people in this area is susceptible to people taking this expertise to other companies. The largest issue comes from the vendors the firm currently partners with during deployments. These vendors may consider the firm's increased service offering as encroaching in their areas. This may be tempered by the fact that no vendor currently has a significant presence in the service delivery of SOA that is a current partner of the firm.

Become an Integral Part of the Standards Committee

This thrust will provide a significant competitive advantage to the firm. The standards of SOA are is in their infancy. The firm is going to make a significant investment in its SOA initiative. The reasons it must become a member of the standards committees is two fold. First, as a member of the committee it can influence the committee and overall standards to move in a more favorable direction for the firm. Secondarily, the firm will benefit from the early first hand knowledge it will receive from its membership in the standards committee.

Name:	Become an Integral Part of the standards committee
Description:	Assign top engineers to become active members of the standards committee.
Responsible Manager:	The Common Services Business Unit Engineering Manager
Other Key Participants:	All other Business Unit Engineering Managers
Other Important Contributors:	The existing members of the standards committee.
Key indicators for Management Control and Targets:	Two top engineers on the main board on each standards committee. A team of two top engineers from each BU assigned to an internal SOA committee.
First Milestone Description:	Firm having two members on the main board.
First Milestone Date:	2 months from start of strategy
Resources Required:	Two engineers from each of the Business Units.
Statement of Benefits	Increased first hand knowledge of the standards to influence direction of the engineering effort. Compliant products to market faster. Increased engineering efficiency
Vulnerabilities:	Limited to the time spent on the committees, both internal and external. If the knowledge influences the direction of the engineering effort in a direction that does not become the final standard there will be a large rework cost.

Build and Educate Sales Force on SOA

The firm will need to educate its sales force on the offerings so that they might be able to better sell these offerings to their customers. This must be completed and put in place months before the firm's products are SOA compliant so that the sales personnel can build excitement around the release.

Name:	Build and Educate Sales Force on SOA
Description:	Compile sales and marketing materials for the Sales force and hold seminars on the benefits of SOA. Come up with case based studies of the ROI of SOA for the sales force to present to their customers
Responsible Manager:	The Common Services Business Unit Sales Manager
Other Key Participants:	All other Business Unit Sales Managers
Other Important Contributors:	Existing Customers deploying SOA to act as the case studies.
Key indicators for Management Control and Targets:	Sales and Marketing materials prepared. SOA offerings driving sales. Increase service sales.
First Milestone Description:	Marketing materials prepared Seminars held on SOA.
First Milestone Date:	9 months from start of strategy
Resources Required:	Marketing personal to prepare materials. Training managers to hold the seminars.
Statement of Benefits	Increased first hand knowledge of the standards to influence direction of the engineering effort. Compliant products to market faster. Increased engineering efficiency. Increase sales dollars from services.
Vulnerabilities:	Limited to the cost of time spent on the effort not yielding positive value to the firm.

Build Internal SOA Committee

An internal committee must be formed to keep each of the business units up to date with all the latest SOA information and data. This cross talk should cut down on redundant engineering efforts as different models can be potentially utilized across multiple products.

Name:	Build Internal SOA Committee
Description:	Assign top engineer to serve on a firm wide SOA committee within the firm. Assign roles and responsibilities to these engineers and have members responsible for areas of research.
Responsible Manager:	The Common Services Business Unit Engineering Manager
Other Key Participants:	All other Business Unit Engineering Managers
Other Important Contributors:	Each Business Units sales and marketing teams to influence the committee with the inputs received from their customers.
Key indicators for Management Control and Targets:	Reduced engineering redundancy. Increase modularization of products that can be integrated into the different BU products
First Milestone Description:	Committee set up Internal report compiled on each Business Unit's engineering expertise and effort to be shared with other committee members
First Milestone Date:	2 months from start of strategy
Resources Required:	Engineers to serve on the committee Business Unit manager's willing to share their engineering initiatives with other BU
Statement of Benefits	Increased engineering efficiency
Vulnerabilities:	Limited to the time spent on the committee not yielding value to the firm in terms of revenue.

Build Market Share

The ultimate goal of any firm's effort is to yield value to the firm in terms of growth, revenue or ROI. Hopefully the firm's efforts in development of the SOA standards and products will reap benefits in the long term. This last area will be the gauge as to whether or not the efforts in the last two areas were worth pursuing.

Increased SOA enabled and SOA enabling solution sales

As the first benchmark in this main area the firm must be able to identify and quantify sales that come directly from the efforts to be on the forefront of the SOA implementation wave. This effort will require close monitoring of the customers from the sales people. Hopefully the sales people will be able to up sell into their existing customers and land new customers from other vendors who do not have SOA compliant products. In light of the increased service effort, the sales people will be able to increase their sales numbers with the firm's new offering.

Name:	Increased SOA enabled and SOA enabling solution sales
Description:	Sell the firm's SOA compliant products
Responsible Manager:	The ESM Business Unit Sales Manager
Other Key Participants:	All other Business Unit Sales Managers
Other Important Contributors:	Tier 1 and 2 customers.
Key indicators for Management Control and Targets:	Increase sales based on the firm's SOA offerings. Increased sales dollars from services.
First Milestone Description:	4th quarter sales (from start of strategy) numbers show an increase based on SOA effort and products
First Milestone Date:	4th quarter from start of strategy
Resources Required:	Sales force to spend time on acquiring SOA proficiency. Sales force to focus on SOA and present a story of ROI to their customers. Marketing People time to prepare the materials
Statement of Benefits	Increased sales revenue
Vulnerabilities:	Limited to the time spent on the effort not yielding value to the firm in terms of revenue.

Increase education of partners on the firm's products towards deploying SOA based infrastructure

The firm utilizes a large pool of partners and system integrators at this time to deploy its products. There are significant amount of sales that come through this channel. The firm must strive to enable its current partners to sell the firm's SOA offerings.

Name:	Increase education of partners on the firm's products towards deploying SOA based infrastructure
Description:	Educate the value chain to increase the firm's sales of SOA compliant products and services.
Responsible Manager:	The ESM Business Unit Sales Manager
Other Key Participants:	All other Business Unit Sales Managers
Other Important Contributors:	The current systems integrators.
Key indicators for Management Control and Targets:	Increase sales based on the firm's SOA offerings through the system integrator channels. Sales and marketing materials prepared for the integrators. System Integrator training sessions held.
First Milestone Description:	Materials and training session held in alignment with the release of the products from the different Business Units
First Milestone Date:	3 months before the product releases
Resources Required:	The Firm's business development and training personnel to spend time on acquiring SOA proficiency and in turn training the system integrators The business development people working in close alignment with the system integrators to provide them with what they need to forward the sales goals of the firm. Marketing People time to prepare the materials
Statement of Benefits	Increased sales revenue through the system integrator channel
Vulnerabilities:	Limited to the time spent on the effort not yielding value to the firm in terms of revenue.

Build External Credibility in SOA Space

The firm is well known in the IT management space. SOA provides a significant opportunity for the firm to become a market leader in the space. Current market analyses of the space by the analysts do not show the firm as a player in the segment. If the firm does want to garner significant revenues in the SOA segment it must strive to be come the defacto standard in the space.

Name:	Build External Credibility in SOA Space
Description:	Become an industry leader in the SOA market.
Responsible Manager:	The Enterprise Business Unit Marketing Manager
Other Key Participants:	All other Business Unit Marketing Managers
Other Important Contributors:	The executive committee of the firm.
Key indicators for Management Control and Targets:	Increase sales based on the firm's SOA offerings. Increased coverage by the analysts of the firm in the segment.
First Milestone Description:	Show up as a market presence in the SOA segment
First Milestone Date:	6 months from start of strategy
Resources Required:	Marketing and Business development people within the firm to work with the analysts.
Statement of Benefits	Increase number of sales opportunity coming directly thorough the market presence
Vulnerabilities:	Limited to the time spent on the effort not yielding value to the firm in terms of revenue.

Customer Targeting (CT)

"This process addresses the business to customer interface. It encompasses the activities intended to attract, satisfy and retain customers, ensure the customer relationships and manage effectively. Its primary objectives are to identify and select attractive customers and to enhance financial performance, either by helping to reduce costs or increase their revenues. The ultimate goal of this process is to establish the best revenue infrastructure for the business." (*The Delta Project. Arnoldo Hax pg 122*). This section is dedicated to identifying these customer targeting requirements and tying them into each strategic thrust.

Customer Targeting Requirements

The team has identified several steps to meeting the intent of the firm wide strategic thrusts from a customer targeting perspective. This section will talk briefly about the three main groupings of the firm wide thrusts (see table 29). The team has included a chart of positions and what the firm should focus on for each position of the Delta Model (see table 28)

Description of Role

	Focus of Attention	Output	Objective
Best Product	Distribution Channel - generic Customer	Channel Mix	Maximize product volume and product market share. Minimize distribution costs
Total Customer Solution	Targeted Customer	Target Market Intelligence - Customer Interface	Maximize Share of each Customer
System Lock In	Relevant Business System	Network of Complementors Complementor Interface	Maximize share of Complementors

Table 28 - Customer Targeting Position Analysis

Solidify the Offerings

This segment is the most in line with customer targeting. Without the proper targeting the firm cannot build products that will derive value for the customer and in turn the firm. This initial building block is the foundation of the entire strategy.

Build Internal Capabilities

This area of the strategic thrusts also deals with what is going to be delivered to the customers and how it will be delivered in ways that drive value for the firm. This includes specifics about how the targeting will be done and what specific tasks are needed to deliver value to the customer.

Build Market Share

The firm needs to garner market share and revenues in order for the initiative to provide NPV for the effort and money invested. Building market share is centered on targeting customers and making those customers realize they will gain value if they use the firm's products.

	Strategic Thrusts	Customer Targeting Requirements
Solidify Offerings		
1	Define and build the SOA Security Management Offerings	Perform a needs analysis of the existing customers gaps in Security Management of IT infrastructure
		Perform an internal assessment of current products status, roadmap with the customer needs analysis context
		Develop a plan and timeline roadmap to deliver the products within the guidelines
2	Define and build the SOA Business Service Optimization (BSO) Offerings	Perform a needs analysis of the existing customers gaps in Security Management of IT infrastructure
		Perform an internal assessment of current products status, roadmap with the customer needs analysis context
		Develop a plan and timeline roadmap to deliver the products within the guidelines
3	Define and Build SOA Storage Management Offerings	Perform a needs analysis of the existing customers gaps in Security Management of IT infrastructure

	Strategic Thrusts	Customer Targeting Requirements
		Perform an internal assessment of current products status, roadmap with the customer needs analysis context
		Develop a plan and timeline roadmap to deliver the products within the guidelines
4	Define and Build the SOA Enterprise Services Management (ESM) Offerings	Perform a needs analysis of the existing customers gaps in Security Management of IT infrastructure
		Perform an internal assessment of current products status, roadmap with the customer needs analysis context
		Develop a plan and timeline roadmap to deliver the products within the guidelines
5	Develop Common Integration Platform	Perform a needs analysis of the existing customers gaps in Security Management of IT infrastructure
		Perform an internal assessment of current products status, roadmap with the customer needs analysis context
		Develop a plan and timeline roadmap to deliver the products within the guidelines.
Build Internal Capabilities		
6	Hire Personnel and Develop Technical Capabilities in the Engineering organization	Identify the skill required to meet the needs of the products targeted at our customers
		Build training capabilities to on solutions complementors and SOA standards
7	Hire Personnel and Develop Technical Capabilities in the various Services organization including Support and Technical Services.	Identify the skill required to meet the needs of the SOA Deployments targeted at our customers
		Build training capabilities on the deployment of the solutions complementors and SOA standards
8	Become an Integral Part of the Standards Committee	Participate in the standards committee to ensure the firm's products are in line with the standards
9	Build and Educate Sales Force on SOA	Create an array of sales tools to better enable the sales force
		Develop a series of training sessions on the sales of SOA solutions
10	Build Internal SOA Committee	Identify key customer needs as it relates to the evaluation of SOA solutions and ensure proper adherence
Build Market share		
11	Increase SOA enabled and SOA enabling sales	Target customers according to the specified strategy for each customer

	Strategic Thrusts	Customer Targeting Requirements
		segment tier identified in chapter 2
12	Increase Education of Partners on the firm's products toward deploying SOA based infrastructure	Develop a series of seminars and workshops to educate partners
		Create a library of white papers and case based studies for partners
13	Build External Credibility in the SOA Space	Develop a series of seminars and workshops to educate customers
		Create a library of white papers and case based studies for customers

Table 29 – Customer Targeting Strategic Agenda for the firm

Examining the firm's needs to perform customer targeting through the use of the firm wide strategic thrusts depict why this step is so critical to the mission of the firm. For the firm to deliver value to the customer or potential customers it must do very accurate needs analysis and develop the products and services that will drive the customers around the Delta Model toward System Lock-in. After the needs analysis is complete the firm must strive to deliver its products rapidly to market to get the first mover advantage over its competitors. These closely coordinated efforts are the quickest way to increase the firm's bonding with the customer.

Environmental Scan

An environmental scan has been performed in chapter 2 through the use of Michael Porter's Five Forces model of the IT management industry and the firm's position within that industry. We will then have to determine the forces that will shape the emerging SOA market (external factors), how quickly the market will be developed and the potential opportunities within the market the firm can exploit.

Comparisons with the firm's competitors

The team compared the firm to two if its closest competitors, HP and IBM. Even though there are many small and niche players in the market or are entering the market, we have chosen these two based on their similar sizes and scopes to that of the firm. These comparisons are done on a variety of dimensions that try to assess critical areas of competitiveness. These dimensions include an examination of product strategy, customer strategy, distribution strategy, pricing strategy, promotion and advertising strategy, and service strategy.

Competitive Profile of IBM vs. the Firm						
	Indicators	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Product Strategy					
	Sales Growth Rate				X	
	Market Share				X	
	Breadth of Product Line				X	
	Product Differentiation			X		
	New Product Releases			X		
	Product Bundling			X		
2	Customer Strategy					
	Customer Share				X	
	Customer Retention				X	
	Profitability by Customer			X		
	Customer Involvement in Development Cycle			X		
	Degree of Customization per Customer				X	
3	Distribution Strategy					
	Efficiency of Distribution Channels			X		
	Customer Service Levels					X
	Distribution Costs per Channel			X		
	Distribution and Sales Force Productivity				X	
4	Price Strategy					
	Price Sensitivity			X		
	Pricing of Marketing Mix			X		
5	Promotion and Advertising Strategy					
	Product Segmentation			X		
	Brand Awareness				X	
	Brand Acceptance				X	
	Market Intelligence - ability to predict what the customers will want in the future				X	
6	Service Strategy					
	Service Growth Rate				X	
	Breadth of Offering			X		
	Degree of Custom Services					X
	Service Profitability				X	
	Service Revenue				X	
	Service Performance by Customer				X	

Table 30 - Competitive Profile of IBM vs. the Firm

Competitive Profile of HP vs. the Firm						
	Indicators	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Product Strategy					
	Sales Growth Rate			X		
	Market Share			X		
	Breadth of Product Line		X			
	Product Differentiation		X			
	New Product Releases			X		
	Product Bundling		X			
2	Customer Strategy					
	Customer Share		X			
	Customer Retention			X		
	Profitability by Customer			X		
	Customer Involvement in Development Cycle		X			
	Degree of Customization per Customer		X			
3	Distribution Strategy					
	Efficiency of Distribution Channels			X		
	Customer Service Levels			X		
	Distribution Costs per Channel			X		
	Distribution and Sales Force Productivity			X		
4	Price Strategy					
	Price Sensitivity			X		
	Pricing of Marketing Mix			X		
5	Promotion and Advertising Strategy					
	Product Segmentation			X		
	Brand Awareness			X		
	Brand Acceptance			X		
	Market Intelligence - ability to predict what the customers will want in the future			X		
6	Service Strategy					
	Service Growth Rate				X	
	Breadth of Offering				X	
	Degree of Custom Services				X	
	Service Profitability				X	
	Service Revenue				X	
	Service Performance by Customer				X	

Table 31 Competitive Profile of HP vs. the Firm

Critical External Factors for Customer Targeting

Another dimension that needs to be explored in the environmental scan is the external factors that affect all players in the industry and how these factors can affect the industry in a positive and negative way. These factors include the following:

- Market Factors
- Competitive Factors
- Economic Factors
- Government and Political Factors
- Regulatory Factors
- Technology Factors
- Legal Factors
- Social Factors
- Environmental Factors
- Human Resources and Labor Factors

Customer Targeting Scan		
	Impact	
Critical External Factors	**Positive (Opportunities)**	**Negative (Threats)**
Market Factors		
Need for SOA in large Fortune 500 corporations in mature and developed economies such as North America, Europe and Japan.	The large revenue generation opportunities to be captured from the customers willing to deploy SOA.	Market is in infancy and technology is not yet mature enough to prove ROI
Competitive Factors		
Large pool of players in various aspects of SOA. However, only three or four vendors have the market reach as well as the horizontal breadth of IT management solutions available.	The large revenue generation opportunities to be captured from the customers willing to deploy SOA.	Fragmentation in the supplier base. Possible loss of market to smaller players with best of breed niche solutions.
Economic Factors		
In spite of globalization and the rise of India/China aka "Chindia", the need for SOA solutions exists in mature and large corporations that mainly exist in North America, Europe and Japan.	Large companies in these target markets are already existing customers of the firm.	Large capital investments required for SOA by these customers require more effort and time towards these sales targeting these opportunities. Current factors preclude companies in the "Chindia" market due to focus on NA, Europe and Japan.
Government and Political Factors		
N/A		

Customer Targeting Scan		
	Impact	
Critical External Factors	**Positive (Opportunities)**	**Negative (Threats)**
Regulatory Factors		
Scandals in North American and Japanese corporations have forced the government to enact strict compliance and regulatory laws such as SOX.	Large companies need to show compliance to the various regulatory authorities and thus need various IT management solutions immediately.	Expense associated with regulatory compliance that will reduce the overall slice of IT spending available for non-regulatory compliance projects. Large multinationals are shying away from listing in US stock markets due to strict SEC regulations in reporting and accounting practices that is causing these companies to move their headquarters to more friendly environments.
Technology Factors		
Infancy of technology standards to implement SOA using web services or other methodologies.	Opportunity for innovation in the field of IT management.	Lack of mature standards and clear direction may cause companies to adopt half baked solutions.
Legal Factors		
N/A		
Social Factors		
N/A		
Environmental Factors		
N/A		
Human Resources and Labor Factors		
Rise of cost effective IT labor from India and China. Outsourcing of back office functions to India and China through BPO (Business Process outsourcing) firms.	Reduced cost of engineering and product development through ITC (India Technology Center) for our firm. Customer themselves have a globalized labor pool and distributed centers worldwide across various functions of their value chain that require seamless IT processes and thus SOA.	Distance between product development and actual target markets increases and thus requires greater coordination. The solutions from the firm are affected by this same globalization thus requiring language localization, greater reliability and scalability.

Table 32 - Critical External Factors for Customer Targeting

Summary of Critical External Factors

The external factors play well to the firm's strengths in most areas. The firm is one of the Fortune 500 players and can overcome all of the negative aspects of the factors though its scope, breadth and resources. This ability to allocate resources that smaller firms cannot perform allows the firm a certain staying power and the ability to pick off market opportunities and perhaps the competition. Acquiring the smaller firms with the best of breed solutions is the best way to bring the innovation into the firm that meets the firm's customer targeting needs. These best of breed solutions can include the burgeoning segment of companies entering the regulatory space. The firm is also well positioned to capitalize on the talent pool growing outside the firm. This process can be carefully managed between the engineering and account management teams to overcome the potential loss of information due to increasing distances from the firm.

Internal Scrutiny

The next dimension that must be examined is the firm's internal policies and how it targets or intends to target customers through the tiers. On a whole the firm utilizes the strength it has developed in the IT management market due to its sheer scope and size to target customers currently utilizing a wide variety of tools. Highly trained and dedicated account management teams work closely with the customers on an ongoing basis targeting existing customers. This ongoing basis allows the firm to gather first hand information that affords it a significant competitive advantage with its existing customer base and should be extensible to new customers. To target new and potential customers the firm has made effective use of industry analysts and trade shows /conferences to let the general market know about the firm's products and services.

The firm is a seasoned player in the IT management space and has developed many internal policies to make its customer targeting efforts effective and efficient. These policies and procedures must be carried over to the new SOA initiatives.

Decision Category	Description of Policy	Strength	Weakness
Marketing Intelligence	* Main competitors are the other large IT management software providers such as IBM, HP and BMC. Therefore, keep track of them through their own product promotional material (expo's, www etc.) as well as through customer perception. * Industry analysts from various research firms such as Gartner, Forester etc. periodically present updates on products and firms. * Direct customer contact keeps the firm updated of the competitive landscape of solutions available to them at any given point.	* Industry analysts are very objective in their assessment of companies and their technologies. Therefore our firm's standings provide it with a good benchmark. * Direct customer contact enables the firm to get first hand knowledge.	* Analyst reports are timed material and depend on the scope of the relationship between the firm and the analyst. * Material on product launches obtained at expos and via the internet can be outdated or falsified thus hiding the true state of affairs. * Customers might have a biased opinion of the competitor's product or the firm's own products.
Defining and Analyzing Markets	* Understand the need for IT management using SOA at various customer segments based on our current customers. * Industry analysts from various research firms such as Gartner, Forester etc. periodically present updates on markets as well as customer needs.	* Focus on current customers ensures that the market strategy of the firm is in line with future sales enablement and customer needs. * Industry analysts are very objective in their assessment of market. Therefore our competitors and our customers obtain the same information as is available to the firm.	* Tiers created as a result of customer segmentation may not be correct and will need to be revisited as the market evolves. This might lead of significant loss of opportunities. * Revenue estimates or other quantitative data for nascent or non-existent markets might prove to be incorrect whether analyzed in-house or from analysts.

Decision Category	Description of Policy	Strength	Weakness
Product Strategy	* Understand product needs for IT management at various customer levels based on our current customers as well as prospective ones contacted through POC's.* Industry analysts from various research firms such as Gartner, Forester etc. periodically present updates on markets as well as customer needs that shape product strategy.* Close collaboration with academic and research institutions ensures a constant stream of new ideas in the field of IT management.* Feedback from the firm's service personnel on customer environments regarding usage, interoperability and performance.	* Focus on current customers ensures the product strategy of the firm is in line with future sales enablement and customer needs.* Industry analysts are very objective in their assessment of product needs for a given market. Therefore our competitors and our customers obtain the same information as is available to the firm.	* Product needs analysis data might be incorrect causing the firm to allocate precious resources that might be put to alternative use.
Product Introduction	* Use of the firm's annual technology expo as well as other symposium's to reveal product pipeline as well as provide extensive demos and learning. * Direct customer contact keeps them updated of product pipeline and obtain early feedback. * Reviews and product piloting by industry journals. * Advertising in industry journals.	* The use of expos is a very powerful mechanism that brings together the firm's target audience in a very efficient manner. * First hand customer contact and feedback on products during the beta stage ensures introduction of overall high quality products. * Industry reviews provide the firm with much needed credibility and exposure while doing so in a very cost effective manner.	* Expos can be very expensive and require extensive planning and logistics. * Can be time consuming to obtain beta customer who are willing to test drive new products during the development stage. * Advertising in industry journals can be ineffective in reaching certain members of the target audience.

Decision Category	Description of Policy	Strength	Weakness
Distribution Strategy	* Various distribution channels include direct, VAR (value added resellers, web store and indirect through third-party integrators. * Product delivery is done through the use of physical media or available via the internet.	* Direct contact and distribution yields very high profitability and visibility to the customer when compared to indirect methods.	* Direct contact is very time consuming and requires an appropriate sales and support infrastructure.
Price Strategy	<< CANNOT DISCLOSE PROPRIETARY INFORMATION >>		
Promotion and Advertising Strategy	* An integrated promotion strategy with multiple components including advertising (presentation and promotion of the firm's products and services), direct selling (oral presentation to one or more prospective customers) and, sales promotion (trade shows, 30 day trials).	A multi-prong approach to ensure maximum advertising and promotion coverage with targeted scope at various tiers of customers.	Unlike consumer products where the impact of advertising can be measured more clearly, the success of enterprise IT software sales depends more on a direct approach thus causing the value from non-direct methods to be diluted by the long cycles of sales.

Decision Category	Description of Policy	Strength	Weakness
Sales Strategy	A comprehensive sales strategy encompassing the following channels: * Direct sales team * VAR (Value Added Reseller) * OEM (Original Equipment Manufacturer) * VET (Vendor of Education and Training services) * SMB (Small and medium business specialist) * ESP (Enterprise Solution Partner)	A multi-prong approach to ensure maximum sales coverage with potential customer exposure.	This approach can be difficult to manage/coordinate due to the loss of first party control. Further, the margins to the firm can be reduced as it is shared with the participants in the sales channel.
Service Strategy	* Current mix of in-house services units (CATS) and integrators to provide a variety of pre-sales environment scan, implementation and post-sales support. * Services can include customer software modules developed by the firm in order to complement the firm's solutions as per customer need. * Availability of a large portfolio of learning services that can be offered at the customer site or at the firm's facilities.	A multi dimensional service offering that covers not only all of the firm's products, but also any interoperability needs with products from other vendors.	Due to the relative size and strength of the services bench in comparison to large competitors, the need for integrators causes the firm to be one step removed from certain customers lessening the bond.

Decision Category	Description of Policy	Strength	Weakness
Marketing Organization and Managerial Infrastructure	* Comprehensive in-house marketing organization working directly with the marketing intelligence gained from the sales and services team.* The account team model where a given team targets and works closely with one or more customers. This team structure comprises of the account director, account manager and the individual members of the account team	Availability of first hand information on customer needs as gathered through the Sales and Services organizations.For the firm, the account team model ensures maximum bonding with the customer as well as increased exposure of all the firm's offerings to the customer.For the customer, the account team model ensures rapid response from the firm on various aspects including post sales support, ongoing product maintenance as well as product availability information.	The in-house marketing organization might be stretched too thin to cover the current and potential customer base due to the increasing complexity and scope of the products.The account team model can be expensive to implement across all the tiers of the customers in spite of the benefits.

Table 33 - Internal Scrutiny for Customer Targeting

Customer Targeting (Marketing) Strategic Agenda

The final step in the customer targeting section is to define specific thrusts that must be performed to carry out the firm's customer targeting strategy. The team has identified nine strategic thrusts shown in the table in the next page. These strategic thrusts set the agenda of the firm's marketing effort. Each on is broken down like the firm's overall strategic thrusts into the critical dimensions of:

- The parties needed to oversee the mission will list out the key participants and contributors within the firm that must buy into and actively participate and single out one position to lead the effort.
- The key factors for the management of the process and targets
- The key milestones and projected dates[5]
- The resources required to achieve the strategic thrusts and meet the proposed milestones
- A statement of benefits in pursuing the strategic thrust.
- An opinion of how comprehensive must firm must develop this thrust
- An opinion of how much of a stretch this strategic thrust is for the firm.
- The vulnerability of competitors to appropriate the firm's competitive advantage if the firm pursues this strategic thrust.

---

[5] The time horizon for this overall study is 2 –3 years. The milestones will not extend beyond this period.

The Strategic Agenda for the Firm on Customer Targeting																		
		Security			Storage			ESM			BSO			CATS	Other			
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Support/Services		Business Process	**Performance Metrics**
Solidify the Firm's offerings																	
1	Analyze the functional gap between customer needs and our current product offerings in order to ensure a pipeline of new products and existing product enhancements that addresses this gap correctly.		2			2			2			2		2	1	CT	Reduced cost of development per sale.
2	Develop better mechanisms to capture customer intelligence from external channels such as VARS and System Integrators.		2			2			2			2		2	1	CT	Reduced cost of development per sale and a new focus on distribution of products through channels
Develop/Strengthen customer targeting																	
3	Increase contact with VARS and System Integrator. Increased marketing materials and training for VARS and System Integrators.		2			2			2			2		2	1	CT	Increased number of sales leads for the channels. Increased firm focus on its channels.
4	Improve support mechanisms for VARS and System Integrators during sales engagements.			2			2			2			2		1	CT	Increased number of sales leads for the channels. Increased wallet share of the customers.

The Strategic Agenda for the Firm on Customer Targeting																	
		Security			Storage			ESM			BSO			CATS	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Support/Services		Business Process	**Performance Metrics**
5	Increase list of System Integrators/Service providers to create a 'virtual' one stop shop for customer needs		2			2			2			2		2	1	CT	Increased sales Increased wallet share of the customers IT spending. Decreased customer engagements with competitors
6	Create target list of companies that can be potential tier 1 or tier 2 customers.		2			2			2			2		2	1	CT	Focused customer targeting and sales effort. Reduced cost of sales
Develop Market Presence and Brand Awareness																	
7	Create brand awareness through increased promotions, marketing, and advertising effort.		2			2			2			2		2	1	CT	Increased sales leads and customer engagements
8	Continue to build upon the success of the past large sponsored conferences such as CA World by hosting additional mini-conferences or seminars in geographic locations with high target customer concentrations		2			2			2			2		2	1	CT	Increased sales leads and customer engagements coming from the seminars

The Strategic Agenda for the Firm on Customer Targeting																		
		Security			Storage			ESM			BSO			CATS	Other			
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Support/Services		Business Process	**Performance Metrics**
9	Provide manuals that explain product positioning and value guidance, implementation and installation experiences as well as step-by-step 'how to' guidelines on all of the firms products and solutions		2			2			2			2		1		CT	Increased sales leads and shortened customer engagements. Increased effectiveness and closing rates on the part of the sales teams due to the guides.
	Key																
	Level 1 will be the champion of the thrust within the firm																
	Level 2 will be the parties that are integral to the thrust																
	Level 3 will include the interested parties within the firm																

Table 34 - The Strategic Agenda for the Firm on Customer Targeting

Analyze the Functional Gap between the customer needs and the Firm's Offerings

The first and most critical piece of customer targeting is to perform a needs analysis of the customers and identify what opportunities exist within the market the firm can exploit. This analysis must be carefully and diligently performed less the firm may develop products that do not yield a positive return to the firm. This process must not only include the Tier 1 and Tier 2 customers but also the potential customers that the firm may acquire at all levels. That being said this step must be done in close unison with the thrust 6, which develops the list of potential targets.

Name:	Analyze the Functional Gap between the customer needs and the Firm's Offerings
Description:	Identify opportunities in the SOA market that the firm can meet through the modification of its products, development of new products, or the acquisition of complementary products.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management Control and Targets:	Reduce cost of development per sale. Positive NPV products delivered to the market
First Milestone Description:	Development of the needs analysis
First Milestone Date:	3 months from start of Strategy
Resources Required:	Marketing personnel to assess the market place and perform standard marketing needs analysis and studies Account managers to assess customer's needs
Statement of Benefits	Better Understanding of the customer's needs with SOA Reduced development costs per sale. Increased margins
Vulnerabilities:	This analysis when done in the open market may tip the firm's hand as to the scope and direction it intends to take with its SOA offerings. This will also require the firm's top management and marketing staff to dedicate the time and effort to make this a viable and profitable effort

Develop better Mechanisms to Capture Market Intelligence from External Channels

A critical element the firm has struggled with in the past is gathering data from its external channel. Since these channels represent a significant portion of the companies sales it must develop better mechanisms throughout the value chain to gather data it can utilize to target customers and customer needs. This development of customer targeting processes must be performed across the firm. The team realizes this is a challenge since these same channels also use the data to their own competitive advantage.

Name:	Develop better Mechanisms to capture market Intelligence from external Channels
Description:	Gather customer data throughout the value chain to gain competitive advantage.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers
	Business Development Managers
Other Important Contributors:	The external channel partners
Key indicators for Management Control and Targets:	The reduced cost of development per sale
	The development of positive NPV products
	The increase in sales through the channels
	Closer bonding with the channels
First Milestone Description:	Development of customer information agreements with the external channels and the process in place to share this information
First Milestone Date:	12 months from start of Strategy
Resources Required:	The business development personnel to create the process with the channels and the marketing people to define the information needed and to decipher the information upon receipt.
Statement of Benefits:	Increased sales through channels.
Vulnerabilities:	The possible loss of the information and or customers to competitors through channels that partner with the firm's competitors.

.

Increase Bonding with and education for VARS and System Integrators

The firm must continue to bond with the Value Added Resellers (VARS) and System Integrators. These two channels represent significant market opportunity for the firm. It can only benefit the firm to create enablement materials so these channels can sell and service the firm's products. This tightening of the bond will hopefully abate some of the vulnerabilities stated in the previous strategic thrust (possible loss of competitive data).

Name:	Increase bonding with and education of VARS and System Integrators
Description:	Create a tighter bond with these two channels and create enablement materials for these channels to sell and deliver the Firm's products more seamlessly. This must also include an evaluation of the incentive structure of the channels to ensure proper alignment of these channels with the firm.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers
	Business Development Managers
Other Important Contributors:	The external channel partners
Key indicators for Management Control and Targets:	Increased number of sales leads for the channels
	Increased percentage of closed sales for the channels
First Milestone Description:	Reevaluation of the channel program and the incentive structure of the channels
First Milestone Date:	12 months from start of Strategy
Resources Required:	The business development personnel to evaluate the incentive structure of the channels. The sales and marketing people to create the educational materials and sales and marketing materials.
Statement of Benefits:	Increased sales through channels.
Vulnerabilities:	The possible loss of the information and or customers to competitors who share this information with the competitors

Increase Support Mechanisms for VARS and System Integrators

The firm's focus on products instead of services has created the dramatic reliance on the VARS and System Integrators to get the products to the customer. While the firm does have a staff that supports these channels, there could be improvement. Whatever action the firm takes to allow the channels to sell more efficiently and effectively, the better they will be able to represent and sell the products yielding higher revenue for the firm.

Name:	Increase Support Mechanisms for VARS and System Integrators
Description:	Define the processes to make the VARS and System Integrators more efficient at targeting and landing potential customers.
Responsible Manager:	The Vice President of Support
Other Key Participants:	All Business unit Support Managers
Other Important Contributors:	The external channel partners
Key indicators for Management Control and Targets:	Increased number of sales leads for the channels Increased percentage of closed sales for the channels
First Milestone Description:	Development of a support structure dedicated to the channels
First Milestone Date:	12 months from start of Strategy
Resources Required:	The business development personnel to evaluate the incentive structure of the channels. The support personnel to add value to the channel sales process by offering active product install and implementation support during the sale.
Statement of Benefits:	Increased sales through channels.
Vulnerabilities:	Much like any initiative where a firm utilizes outside resources, the possibility exists to have information leaked to competitors that would diminish the firm's competitive advantage.

Increase list of System Integrator/Service Providers

The firm has a fairly comprehensive list of services it can provide from sources both inside and outside the firm. As SOA continues to develop and the customer's needs are better understood the firm must reevaluate its list of offerings. With this knowledge, it can add to its offerings not only internally but possible acquisition and increased partnering to more completely meet the needs of the customers.

Name:	Increase list of System Integrator/Service Providers
Description:	Add to the list of complementary services and products that can be presented to the customer in a more 'complete' offering. This will increase the firm's virtual horizontal breadth and hopefully lock out competitors.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers from each Business Unit
Other Important Contributors:	Tier 1 and 2 customers
Key indicators for Management Control and Targets:	Increased sales
	Increased wallet share of the customers
First Milestone Description:	Compilation of needs analysis of customers and evaluation of the firm's offerings. This will be an ongoing event that needs to be looked at quarterly.
First Milestone Date:	3 months from start of Strategy
Resources Required:	Identify and dedicate a team for the needs analysis. Upper management and sales and marketing to fill in the gaps.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Decrease the competitor's sales engagements and revenues within the firm's target market.
Vulnerabilities:	The latter half of this thrust is an internal process with limited vulnerabilities. Any potential vulnerability can be passed off to the third party that provides the service until the third party becomes integrated into the value chain

Create target list of companies that can be potential tier 1 or tier 2 customers.

The firm currently targets any party in need of IT management from the largest corporations in the world down to a single home end user. This broad targeting will not work within the SOA market due not only to the large capital investment but also the scope of the implementations. A more custom list needs to be generated in the segments the firm chooses. This will allow for a more targeted marketing and sales effort.

Name:	Create target list of companies that can be potential tier 1 or tier 2 customers
Description:	Create a comprehensive list of the companies that are viable candidates for SOA implementations and are not locked in with the competitors.
Responsible Manager:	The Vice President of Sale and Marketing
Other Key Participants:	Sales and Marketing Managers from all Business Units
Other Important Contributors:	The VARS and System Integrators to add insight and perspective to the list
Key indicators for Management Control and Targets:	Increased 'close' percentage.
First Milestone Description:	Identification of the target segments within the target list.
First Milestone Date:	9 months from start of Strategy
Resources Required:	Sales and marketing managers to perform a market analysis
Statement of Benefits	Increased percentage of close on sales leads. Reduced cost of sales. Higher sales revenues by customer
Vulnerabilities:	This is an internal process with limited vulnerabilities. The creation and identification of the wrong targets will be vulnerability. If this vulnerability does come to pass it will be readily evident at the start of the sales effort and the list can be modified.

Create Brand Awareness Centered around SOA

The firm has excellent brand awareness in the IT management space in general. The firms SOA offerings do not garner that same recognition. The firm must strive to change this and become the first on customer's minds when it comes to SOA.

Name:	Create Brand awareness for the Firm's SOA offerings.
Description:	Develop market presence with the firm's SOA offerings, leveraging the firm's reputation and credibility in the IT management space.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers of all the business Units
Other Important Contributors:	The Analysts and the Advertising Media
Key indicators for Management Control and Targets:	Sales of SOA offerings up. Articles written about the firm's SOA offerings by the media. The firm's SOA products ranked in analysts reports
First Milestone Description:	Inclusion in the Quarterly Analyst reports on SOA
First Milestone Date:	9 months from start of Strategy
Resources Required:	Business development and Marketing people to work with the media and analysts to have these channels evaluate and report on the products.
Statement of Benefits	Increased name recognition Increased sales through customer initiated contacts
Vulnerabilities:	The vulnerability lies in the possibility the firm releases a product that does not function well and/or has problems when the media and analysts evaluate the offering. This will result in negative evaluations and hurt the overall firm SOA effort.

Host Conferences to showcase the Firm's Offerings

The firm has had great success in generating 'buzz' around it and its offerings at firm sponsored shows such as CA World. When the firm solidifies its SOA offerings, the offerings must be incorporated and highlighted at these shows. These shows are held in areas of high concentration of the firm's customer target list.

Name:	Host conferences to showcase the firm's offerings
Description:	Multiple times a year around the country the firm must host conferences that showcase its products and invite its targets and the general industry.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers of all the Business Units
Other Important Contributors:	The Analysts and the Advertising Media Potential Customers
Key indicators for Management Control and Targets:	Sales generated from show leads for the products Industry 'hype' heightened by the conferences
First Milestone Description:	SOA specific show held and targets invited
First Milestone Date:	12 months from start of Strategy
Resources Required:	Marketing People to advertise and host the shows Sales and support staff on hand to work with the potential customers.
Statement of Benefits:	Increased Sales volume
Vulnerabilities:	The vulnerability lies in the cost and effort of the show. If the shows come off poorly the effort will have a negative impact on the overall firm and the sales of the SOA offerings.

Create 'How To' Guides

A competitor makes excellent use of what it calls 'Red Books'. These manuals can range from installation guides to value propositions and cover a wide range of other topics. This 'complete' set makes it easier for all parties involved in the value chain. Installation guides help the System Integrators and customers. Value propositions help the sales force and customers. These types of books in the hands of the firm's targets will drive sales and value for both the firm and the customer.

Name:	Create 'How To' Guides
Description:	Create a series of manuals to answer questions, show value propositions and proper operating procedures.
Responsible Manager:	The Professional Services team Manager
Other Key Participants:	Sales and Marketing Managers of all the Business Units.
Other Important Contributors:	NA
Key indicators for Management Control and Targets:	Sales of SOA offerings up in direct relation to the value propositions created in the manuals. Support calls down as customers are able to obtain answers to their questions with the manuals.
First Milestone Description:	First round of value propositions created First round of operating manuals created
First Milestone Date:	9 months from start of Strategy for value proposition At time of product release for the operating manuals
Resources Required:	Professional Services team and engineers to create the manuals Professional Services team and sales and marketing to create the value propositions
Statement of Benefits	Increased sales Decreased customer support calls per customer
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent developing the materials.

Summary of the Customer Targeting Requirements of the Firm

Customer targeting is the first step in carrying out the firm's agenda. It is crucial that upper management be intimately involved with the process and for the firm to allocate enough resources early in the strategy process to carry this initiative forward. In solidifying the firm's offerings, the marketing department has to seek out the gaps in the industry. With these gaps in mind the firm must enable all its channels to target and sell more effectively. This can be done through education and increasing the firm's product offerings in the market. Finally, by developing brand awareness and market presence, the firm should be able to get significant returns on its investment and efforts.

Operational Effectiveness (OE)

"This process is responsible for the delivery of products and services to the customer. In the traditional sense, this includes all elements of the internal supply chain. Its primary focus is on producing the most effective cost and asset infrastructure to support the desired strategic position of the business. In a more comprehensive sense, operational effectiveness should expand to the external scope to include suppliers, customers, and key complementors, thus establishing an extended supply chain. This process is at the heart of a firm's productive engine as well as its source of capacity and efficiency."(*The Delta Project, Arnoldo Hax, pg 122*). This section is dedicated to identifying the requirements for operational effectiveness and tying them into each strategic thrust.

Operational Effectiveness Requirements

The team has identified several steps to meeting the intent of the firm wide strategic thrusts from an operational effectiveness perspective. This section will talk briefly about the three main groupings of the firm wide thrusts (see table 36). The team has included a chart of positions and what the firm should focus on for each position of the Delta Model (see table 35)

Description of Role

	Focus of Attention	Output	Objective
Best Product	Internal Value	Internal Cost Infrastructure	Best Product cost
Total Customer Solution	Internal and Customer Value chain	Combined internal and customer infrastructure	Maximum Customer Value
System Lock In	Internal, customer and complementor value chain	System Infrastructure	Enhance system performance

Table 35 - Operational Effectiveness Position Analysis

Solidify the Offerings

For the firm to be operationally effective in solidifying its offerings it must attempt to keep many things in mind across this entire category. The firm must use common development platforms to accommodate greater reusability of products and code. The firm must also begin its effort in SOA with the same discipline that it utilizes across all its IT management software development efforts.

The firm must also strive to use shared knowledge repositories across various engineering organizations in order to promote sharing of skills and knowledge gained from prior product development cycles. Finally, the firm has the benefit of having its own portfolio management products such as Clarity to ensure effective use of resources and optimized product development life cycles.

Build Internal Capabilities

Building internal capabilities with operational effectiveness in mind, the firm must first ensure that it develops and maintains the proper level of expertise in all areas that deal with SOA. This includes development of the engineering expertise, development of the support personnel and development of the sales force to properly present SOA to potential customers. This effort is once again hampered by the infancy of the market. The firm must create all these materials and expertise internally. To gain additional competitive advantage, the firm must develop an internal SOA committee.

Lastly to gain overall competitive advantage the firm must become a driving member of the SOA standards committee. This will provide the firm a two-fold advantage. First, as a driving member, it can influence the committee in ways that will give the firm advantage such in methodologies or technologies the firm is proficient in. Secondarily, the firm will gain early first hand knowledge of the direction of the standards to be released to the industry. This early knowledge will let the firm get a jump on its competitors in getting products to market faster.

Build Market Share

The ultimate goal of any initiative in the firm is to yield greater revenues and profits for the firm. Operational effectiveness in building market share comes in the form of gaining market intelligence in order sell and deploy the firm's products as efficiently as possible. To add efficiency in this area the firm must also share this knowledge with its external channels it relies so heavily on to get its products to market.

	Strategic Thrusts	Operational Effectiveness Requirements
Solidify Offerings		
1	Define and build the SOA Security Management Offerings.	Use of open standards in products being developed to accommodate greater "plug-n-play" interoperability in SOA deployments. Use of open source in development allows not only decreased cost of development, but allows the firm to take advantage of existing fixes to the open source code base thereby increasing speed of development. Use of a common technology stack of components available to the development teams across all business units expedites product development life cycles through shared knowledge of product construction using this common stack. As the firm's focus is that of IT management, the products that are offered in the SOA space fit also fit under the jurisdiction of this scope. Thus it enables greater emphasis on the desired features that enable the firm's products to achieve "best-in-class" status. Use of shared knowledge repositories across various engineering organizations promotes reuse and sharing of skills and knowledge gained from prior product development cycles. Use of the firm's own portfolio management products such as Clarity ensure effective use of resources and optimized product development life cycles. Use of cutting edge software engineering processes ensures a world-class product development infrastructure.
2	Define and build the SOA Business Services Optimization (BSO) Offerings.	
3	Define and build the SOA Storage Management Offerings.	

	Strategic Thrusts	Operational Effectiveness Requirements
4	Define and Build the SOA Enterprise Service Management (ESM) Offerings	
5	Develop Common Integration Platform	
Build Internal Capabilities		
6	Hire personnel and develop technical capabilities in the engineering organization.	Ensure adequate training for our engineering, product management and support personnel.
7	Hire personnel and develop technical capabilities in the various services organizations including support and technical services.	Ensure adequate training for our services personnel.
8	Become an integral part of the various standards committee's	Ensure allocation of time and resources towards representation into the standards committee. Regular feedback sessions from other organizations within the firm. Our firm then delivers this feedback during ensuing standards meetings thereby creating a powerful feedback loop.
9	Build and educate sales organization on SOA	Require mandatory sales training (and examination) on concepts including the value proposition of SOA as related to IT management and details about the offerings from the firm.
10	Build an internal SOA Committee	Ensure allocation of time and resources from each of the organizations in order to sufficiently represent and have a voice in the SOA committee.
Build Market share		
11	Increase SOA enabled and SOA enabling solution sales	Optimize sales force execution through availability of customer intelligence data that can enable cross selling across business unit offerings.
12	Increase education of partners on the firm's products towards deploying SOA based infrastructure	Availability of the same learning tools and resources used by the firm's in-house personnel to the firm's partners.

	Strategic Thrusts	Operational Effectiveness Requirements
13	Build external credibility in SOA space	Increase the content of presentation seminars, learning sessions and hands-on labs in the annual customer conference (CA World) towards education of the customer base and promoting the firm's brand as well as its message

Table 36 - The Strategic Agenda for the firm and Operational Effectiveness requirements

Operational effectiveness is led by understanding what the customer wants (Customer targeting) and then efficiently delivering on these needs. The firm is well positioned in the SOA space as the space will fall into and/or encompass the overall IT management space. This space will be the predominant focus of the firm's competitors due to the potential revenues that can be generated. Taking the product to market will be done in the same tried and true ways that the firm gets all of its other products to market less the suggested increase in services.

Comparisons with the firm's competitors

The next step that must be done to assess operational effectiveness is to assess the firm and two of its competitors on several operational dimensions. In this case we compared the firm to its nearest rivals in terms of size and scope, IBM and HP. This is done in several dimensions. Procurement measures assess the firm's ability to purchase and manage its inventory and vendors that supply the inventory. Manufacturing Measurements assess the firm's ability to make the goods and the overall quality. Lastly, the Distribution Measurements assess the firm's ability to bring its products to market and deploy them at a customer's site.

Competitive Profile of IBM vs. the Firm

	Indicators	Very Weak	Weak	Even	Strong	Very Strong
1	Procurement Measurements					
	Cost of Procured goods				X	
	Purchasing and Administrative Costs			X		
	Inventory Turnover			X		
	Service				X	
	Quality				X	
	Vendor Relationships				X	
2	Manufacturing Measurements					
	Cost				X	
	Delivery				X	
	Quality			X		
	Flexibility to volume changes			X		
	Flexibility to new product introduction			X		
3	Distribution Measurements					
	Efficiency of Distribution channels				X	
	Customer Service				X	
	Distribution Costs			X		
	Distribution and Sales Force Productivity			X		

Table 37 - Competitive Profile of IBM vs. the Firm

Competitive Profile of HP vs. the Firm

	Indicators	Very Weak	Weak	Even	Strong	Very Strong
1	Procurement Measurements					
	Cost of Procured goods			X		
	Purchasing and Administrative Costs			X		
	Inventory Turnover			X		
	Service			X		
	Quality				X	
	Vendor Relationships				X	
2	Manufacturing Measurements					
	Cost			X		
	Delivery			X		
	Quality			X		
	Flexibility to volume changes			X		
	Flexibility to new product introduction			X		
3	Distribution Measurements					
	Efficiency of Distribution channels			X		
	Customer Service				X	
	Distribution Costs			X		
	Distribution and Sales Force Productivity			X		

Table 38 - Competitive Profile of HP vs. the Firm

Critical External Factors to Operational Effectiveness

Another dimension that needs to be explored in the environmental scan is the external factors that affect all players in the industry and how these factors can affect the industry in a positive and negative way.

Operational Effectiveness Scan		
	Impact	
Critical External Factors	**Positive (Opportunities)**	**Negative (Threats)**
Market Factors		
Need for SOA in large Fortune 500 corporations in mature and developed economies such as North America, Europe and Japan.	A rapidly growing market where our firm's scale and scope allows it to react to and capture market opportunities.	A market in its infancy causing difficulties in developing the standard and the focus.
Competitive Factors		
Large pool of players in various aspects of SOA. However, only three or four vendors have the market reach as well as the horizontal breadth of IT management solutions available.	The scale and scope of the firm allows it to provide customers with more comprehensive (integrated and end-to-end) solutions that smaller players can struggle to meet.	Fragmentation in the supplier base causes the firm to prioritize various product features. Possible loss of market to smaller players with best of breed niche solutions requiring more agility in the firm's operations.
Economic Factors		
In spite of globalization and the rise of India/China aka "Chindia", the need for SOA solutions exists in mature and large corporations that mainly exist in North America, Europe and Japan.	Concentrated markets, which require reduced localization efforts thereby increasing the speed of go-to-market initiatives by the firm.	Dedication of resources towards current markets causes the firm to add time and effort to future development efforts and possibly miss out on opportunities outside the target areas.
Government and Political Factors		
N/A		

Operational Effectiveness Scan		
	Impact	
Critical External Factors	**Positive (Opportunities)**	**Negative (Threats)**
Regulatory Factors		
Scandals in North American and Japanese corporations have forced the government to enact strict compliance and regulatory laws such as SOX.	Due to the large size of the firm and prior accounting scandals, the firm is able to understand regulatory frameworks first-hand.	Expense associated with regulatory compliance forces customers to look for more cost efficiencies and features thereby forcing our own firm in work in expedited development cycles. Liabilities associated with the firm's products increase when deployed by customers to address the compliance issues. This effort requires careful product development.
Technology Factors		
Infancy of technology standards to implement SOA using web services or other methodologies.	Due to size and stature of firm, it can participate and drive the standards adopted by the product development teams.	Lack of mature standards and clear direction will require the firm to choose its product dependencies carefully potentially moving in the wrong direction.
Legal Factors		
N/A		
Social Factors		
N/A		
Environmental Factors		
N/A		
Human Resources and Labor Factors		
Rise of cost effective IT labor from India and China. Outsourcing of back office functions to India and China through BPO (Business Process outsourcing) firms.	Reduced cost of engineering and product development through offshore development offices.	Distance between product development and other customer facing departments such as Marketing and Sales increases. This in turn, requires the firm to have greater coordination in its product development life cycle.

Table 39 – Critical factors for Operational Effectiveness

Summary of Critical External Factors

As depicted by the scan of the external factors the firm will be affected in multiple ways operationally by the factors that it faces in the space. This once again leans on the firm's past experiences dealing with all these factors. It has come up with policies and procedures to abate any exposure.

Internal Scrutiny

The firm has several policies that effect its competitive position in the market place. We will examine these policies. On the whole this is another area that the firm puts itself into the very elite group of top players due to these players size, scope and experience level.

These policies will allow us to gauge the viability of our position in the long and short term in the Delta Model. These assessments will drive the strategic thrusts of operational effectiveness.

Decision Category	Description of Policy	Strength	Weakness
Supply Chain Intelligence	Control the Supply Chain from supplier to customer with the customers that originate in the direct channel. For those who are from the indirect channels, the firm utilizes integrators who then assume control of the chain.	In the direct chain this method allows the firm to control the entire process. It attempts to make efficient use of the information gained in the chain. In the indirect chain it allows the firm to hand off the cost of management to the integrators	In the direct channel the increase in management and oversight of the supply chain require resources that may be better served elsewhere. The firm bears the cost for this oversight and control. In the indirect channels the firm is subject to the quality of the intelligence from the other players in the chain.
Selection, Evaluation and Development of suppliers	The firm's current path to the selection and development of its suppliers is to acquire or partner with the vendors and suppliers that can add to its offerings. It usually targets medium size companies that have dominance in areas that can fall under IT management products such as Netegrity.	This allows the firm to focus on companies that fit best to extend the firm's offerings	This method is costly and is more limiting than outright partnerships with other companies that have best of breed products.

Decision Category	Description of Policy	Strength	Weakness
Materials management of purchased goods	NA		
Value Analysis, Price/Cost Analysis and Standardization	The firm standardizes its development platform to reuse code and have greater interoperability. The firm has in depth measures to assess each projects timelines and value proposition	High degree of accountability and standardization	NA

Decision Category	Description of Policy	Strength	Weakness
Facilities	The firm concentrates its sales force and offices around its target demographic of customer locations. The firm has concentrated its development force in areas that have the talent pool to meet the needs of the firm but is beginning to concentrate development in India due to the increasing economical talent pool in the country.	These practices are cost effective and reduce the localization costs. It also costs done on engagement and travel costs. Even when off shoring, English is the first language reducing cost of translation and management.	High contact rate of expensive account people drives up cost of sales and opportunity costs. Extra coordination and costs
Capacity	The firm's primary focus is on product development. It has the ability to flex capacity through outsourcing. The flex in the delivery of products come from the ability to mass-produce the media that delivers the software.	These practices allow for extreme flexibility in development and distribution.	Outsourcing can be difficult to manage in terms of quality and delivery times. The cost of the initial engagement can hinder margins in short-term engagements.

Decision Category	Description of Policy	Strength	Weakness
Vertical Integration	Integrate all Business units in the firm as well as VARS and Integrators.	Lets the firm maximize the development process through shared modules. It also maximized the education and intelligence from all the channels	This practice requires coordination. The information is only as good and effective as this coordination. The information gotten from the extended value chain of the supplier and delivery mechanism may be skewed toward the chains benefit.
Process Technologies	NA		
Product Scope/Introduction of New Products	Add product offerings as opportunities appear in the market. Develops or integrated these products to rapidly deliver them to the market to capture the opportunities.	The scale of the firm allows it to react to market opportunities by shifting or adding resources rapidly. Its internal marketing division enables it to continually pole the market searching for opportunities	It existing product base makes the firm focus on incrementally developing is products. This may cause the firm to pass up break through innovation.

Decision Category	Description of Policy	Strength	Weakness
Distribution Strategy	The firm utilizes direct and indirect channels as well as the internet to distribute its products	This broad range of delivery options is able to get the product to the customer in the most convenient way to the customer.	This multi prong approach is difficult to manage and gain knowledge about the customers from.
Human Resources	The firm seeks out the most talented people that can deliver value to the business and its customers.	The firm's reputation and size allows it to seek out an hire the best and brightest available and offer these people good compensation and stability	The number of layers involved through the firm lead to a large firm mentality and bureaucracy
Quality Management - Purchased & Manufactured Goods	The firm has a comprehensive product quality management system and department. It strives to deliver excellent products without the need for constant patches/fixes.	This allows the firm to deliver products the customers have faith in deploying into their infrastructure. It also reduces the firm's support burden that would have other wise been spent delaying with post deployment problems	This policy causes the firm to have an expensive large-scale effort and team dedicated to this effort.

Decision Category	Description of Policy	Strength	Weakness
Supply Chain Organizational & Managerial Infrastructure	Maximize the cooperation across the business units under the purview of a member of the executive committee.	Allows for central coordination and aggregated purchasing and development deals across the business units	Adds a layer of management and costs to the firm.

Table 40 – Internal scrutiny for Operational Effectiveness

Operational Effectiveness Strategic Agenda

The final step in this section is to define specific thrusts that must be performed to carry out the firm's operational effectiveness strategy. The team has identified nine strategic thrusts shown below. Each on is broken down like the firm's overall strategic thrusts into the critical dimensions of:

- The parties needed to oversee the mission will list out the key participants and contributors within the firm that must buy into and actively participate and single out one position to lead the effort.
- The key factors for the management of the process and targets
- The key milestones and projected dates
- The resources required to achieve the strategic thrusts and meet the proposed milestones
- A statement of benefits in pursuing the strategic thrust.
- An opinion of how comprehensive must firm must develop this thrust
- An opinion of how much of a stretch this strategic thrust is for the firm.
- The vulnerability of competitors to appropriate the firm's competitive advantage if the firm pursues this strategic thrust.

The Strategic Agenda for the Firm's Operational Efficiencies																				
		Security			Storage			ESM			BSO			CSG			HR	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	Performance Metrics
Solidify Offerings																				
1	Analyze Functional Skills Gaps	2	2		2	2		2	2		2	2		1	1				OE	Increased sales/acceptance of products
2	Develop Better use case Mechanisms		2			2			1			2			2				OE	Increased sales/acceptance of products
Build Internal Capabilities																				
3	Develop Training Resources	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1		OE	Decreased attrition and increased retention
4	Improve Human Resource Recruiting Effort	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1		OE	Faster recruitment times
5	Reevaluate Incentive Programs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1		OE	Decreased attrition and increased retention
6	Revaluate Business Process and Product Development Lifecycles	2		2	2		2	2		2	2		2	2		2		1		Shortened product development times
7	Offshore a Large Portion of the Development Process	2		2	2		2	2		2	2		2	2		2		1	OE	Decreased product development costs

The Strategic Agenda for the Firm's Operational Efficiencies																					
		Security			Storage			ESM			BSO			CSG			HR	Other				
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	Performance Metrics
Build Market share																				
8	Reevaluate the Sales and Marketing Efforts		2	2		2	2		2	2		2	2		2	2		1	OE	Increased sales and more effective marketing
9	Create A Knowledge Base and Case Guides		2	2		2	2		2	2		2	2		2	2		1	OE	Increased sales and decreased support calls
	Key																			
	Level 1 will be the champion of the thrust within the firm																			
	Level 2 will be the parties that are integral to the thrust																			
	Level 3 will include the interested parties within the firm																			

Table 41 - Operational Effectiveness Strategic Agenda of the firm

Analyze Functional Skills Gaps

The firm has a large diverse skill set base. SOA provides the firm with an opportunity to extend that skill set base by educating or hiring personnel that can deliver value to the development process, the customer or the external channels. An in-depth internal analysis must be done to assess the skill set gaps the firm must fill in order to develop the products.

Name:	Analyze Function Skills Gaps
Description:	Analyze the functional gap between customer needs and our current product offerings. With this analysis perform an internal audit of the skill sets needed to deliver on these gaps.
Responsible Manager:	The Vice President of Engineering
Other Key Participants:	All Business Unit Engineering Managers Human Resources
Other Important Contributors:	The marketing and sales managers
Key indicators for Management Control and Targets:	Reduced development time Reduction in bugs and coding errors
First Milestone Description:	Skills Gap Analysis Completed
First Milestone Date:	6 months from start of Strategy
Resources Required:	The customer needs gap analysis performed in the customer targeting section. Engineering to perform the skills gap analysis and HR to fill the gaps.
Statement of Benefits:	Reduced development time.
Vulnerabilities:	This is an internal effort extending efforts made in customer targeting therefore, there is limited vulnerability in the time spent with the process.

Develop Better Use Case Mechanisms

The firm must strive to understand the customer's use of the products. With this knowledge the products will be more in line with the customer's needs and desires. This will drive sales and reduce the rework and revamping of the product. This process must be ongoing through Beta groups and use case scenarios. These processes must be accurately reported and fed back into the knowledge base.

Name:	Develop Better Use Case Mechanisms
Description:	Develop better mechanisms to capture customer product use cases from support and service organizations in order to incorporate these into current/future product development initiatives.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Managers Account Managers
Other Important Contributors:	The firm's customers
Key indicators for Management Control and Targets:	Reduce rework/reengineering of the products to meet the customer's needs
First Milestone Description:	Initial use cases developed
First Milestone Date:	9 months from start of Strategy
Resources Required:	Customers and potential customers to act as Beta and use case tester. Account managers to work with the beta customers and the engineers to evaluate the use cases and react to them in development
Statement of Benefits:	Increased sales Reduced Rework
Vulnerabilities:	The possible release of information to the market and competitors about what the firm is working on. The time spent on the evaluations.

Develop Training Resources

In an ongoing effort to drive efficiency the firm must put in place a professional development path for SOA specialists. This must include training resources to have the personnel become more efficient in the development, sales and support processes.

Name:	Develop Training Resources
Description:	Improve training options including internal as well as external classes, attendance to conferences etc. in order to increase skill levels of product development personnel as well as others in various organizations including support, marketing and sales.
Responsible Manager:	The Vice President of Human Resources
Other Key Participants:	Sales and Marketing Managers
	Support Managers
	Engineering Managers
Other Important Contributors:	NA
Key indicators for Management Control and Targets:	Reduced development time
	Increase sales close percentage
	Decreased customer support close time for same issues
First Milestone Description:	Development of the initial set of training materials
First Milestone Date:	9 months from start of Strategy
Resources Required:	Human Resources to develop the materials. The rest of the firm to allocate the time and resources to use the materials.
Statement of Benefits:	Increased sales. Decrease open support case times. Decreased development time.
Vulnerabilities:	The time spent in development and training not yielding value to the process. This is highly unlikely.

Improve Human Resource Recruiting Effort

Human resource recruiting has always been a strong suite for the firm. It must extend this expertise into the SOA market and recruitment.

Name:	Improve Human Resource Recruiting Effort
Description:	Improve ability to attract personnel in various organizations through targeting recruiting including universities, job fairs, career web sites and internal referrals.
Responsible Manager:	The Vice President of Human Resources
Other Key Participants:	HR managers of the Business Units
Other Important Contributors:	NA
Key indicators for Management Control and Targets:	Higher caliber and greater number of applicants attracted to job postings created by the skills gap analysis
First Milestone Description:	Job fair held
First Milestone Date:	1 month after completion of skills gap analysis
Resources Required:	Human resource department
Statement of Benefits:	Higher caliber and great number of applicants
Vulnerabilities:	Time and money spent on the effort

.

Reevaluate Incentive Programs

The firm has in place incentive programs to attract and retain the talent pool it so valuably needs to maintain its position in the IT management segment. It currently has difficulty retaining these people, especially people added to the firm via acquisitions. When these people leave the firm a large learning curve is created. Often, the firm has paid dearly by having to train more people in order to overcome these learning curves but must do it time and time again when employees find more attractive opportunities elsewhere.

Name:	Reevaluate Incentive Programs
Description:	Improve ability to retain talented individuals through appropriate rewards and recognition programs as well as career progression options.
Responsible Manager:	The Vice President of Human Resources
Other Key Participants:	All Business Unit HR Managers
Other Important Contributors:	The top executives of the firm
Key indicators for Management Control and Targets:	Decreased personnel attrition rate.
First Milestone Description:	Reevaluation of the channel program and the incentive structure of the channels
First Milestone Date:	6 months from start of Strategy
Resources Required:	The HR departments to evaluate the incentive structure and the top management to approve any changes that need to be made
Statement of Benefits:	Decrease cost of training for same positions and skill sets.
Vulnerabilities:	A large cost may be associated with changing the incentive structure. A ripple effect may be felt throughout the firm if the structure is changed to one the employees view as less favorable to the one already in place.

Reevaluate Business Process and Product Development Lifecycles

The product development and business process life cycles need to be reevaluated in an attempt to optimize them. This will help not only the SOA initiative but also the entire firm.

Name:	Reevaluate Business Process and Product Development Lifecycles
Description:	Optimize business processes to expedite product development lifecycles including hardware and software procurement.
Responsible Manager:	The COO
Other Key Participants:	Managers of all departments
Other Important Contributors:	NA
Key indicators for Management Control and Targets:	Increased efficiency and time to market for products.
First Milestone Description:	Reevaluation of the Product Development Lifecycles
First Milestone Date:	12 months from start of Strategy
Resources Required:	Managers across the firm.
Statement of Benefits:	Increased efficiency and reduced costs.
Vulnerabilities:	The process is time consuming and requires considerable resources which interrupt other ongoing efforts.

Offshore a Large Portion of the Development Process

With the advent of the firm's development center in India the firm has the opportunity to offshore a large percentage of its development efforts. Off shoring currently accounts for only 20% of the firm's development effort. The remaining 80% is in areas that have considerably higher labor costs that India.

Name:	Offshore a Large Portion of the Development Process
Description:	Take advantage of offshore development centers in low cost countries to not only increase allocation of resources, but also lower cost of product development and product support.
Responsible Manager:	COO
Other Key Participants:	All Engineering Managers
Other Important Contributors:	The Indian Development Center
Key indicators for Management Control and Targets:	Reduced development costs within 6 months No loss of quality of products delivered to customers
First Milestone Description:	An increase to 25% off shoring
First Milestone Date:	6 months from start of Strategy
Resources Required:	Indian Center to have in place the additional capacity to handle the workload
Statement of Benefits:	Reduced development costs.
Vulnerabilities:	The possibility of public outcry when jobs leave the home base in the US. This may negatively impact the image of the firm and must be carefully managed.

Reevaluate the Sales and Marketing Efforts

The sales and marketing efforts must be carefully reevaluated as to their effectiveness. The new products coming out for SOA will require effort on these two departments to train and come up with sales and marketing plan that must be evaluated along with the firm's standard practices.

Name:	Reevaluate the Sales and Marketing Efforts
Description:	Create brand awareness through increased promotions, marketing, and advertising effort.
Responsible Manager:	The Vice President of Sales and Marketing
Other Key Participants:	Sales and Marketing Business Unit Managers
Other Important Contributors:	The External Media
Key indicators for Management Control and Targets:	Increased number of sales leads Increased percentage of closed sales
First Milestone Description:	Evaluation of the sales and marketing efforts
First Milestone Date:	12 months from start of Strategy
Resources Required:	The sales and marketing departments firm wide.
Statement of Benefits:	Increased sales and a reduction in marketing expenses per sale.
Vulnerabilities:	This has limited vulnerabilities and is an ongoing effort throughout the firm

Create a Knowledge Base and Case Guides

The final step in an effort to increase efficiency is to create a knowledge base and use cases. This effort will be in conjunction to the effort in customer targeting that will help drive sales. In this instance this effort will drive internal efficiencies and the efficiencies of the channels.

Name:	Create a Knowledge Base and Case Guides
Description:	Provide manuals that explain product positioning and value guidance, implementation and installation experiences as well as step-by-step 'how to' guidelines on all of the firms products and solutions
Responsible Manager:	The Professional Services team Manager
Other Key Participants:	Sales and Marketing Managers
	Engineering Managers
Other Important Contributors:	Any staff member that can ad value to the process.
Key indicators for Management Control and Targets:	Increased development efficiencies
	Increased support efficiencies
	Increased sales and channel efficiencies
First Milestone Description:	Initial knowledge base created
First Milestone Date:	6 months from start of Strategy
Resources Required:	The professional services team to gather and collate the information. Other participants throughout the firm to add to the knowledge base.
Statement of Benefits:	Increased development efficiencies
	Increased support efficiencies
	Increased sales and channel efficiencies
Vulnerabilities:	Limited to the effort.

Summary of the Strategic thrusts for Operational Effectiveness

The firm, as stated many times throughout this document, is one of the predominant players in the software development market. All these thrusts are commonly found in the firm's current practices. These specific thrusts for SOA do put a small spin on the firm with the possibility of increased services and trying to maximize the value chain. None of these efforts can take place without the support from the highest levels of the organization.

Innovation (Technology) (I)

"This process ensures a continuous stream of new products and services to maintain the future viability of the business. It mobilizes all the creative resources of the firm – including its technical, production, and marketing capabilities – to develop an innovative infrastructure for the business. It should not limit itself to the pursuit of internal product development, but should extend the sources of Innovation to include suppliers, customers, and key complementors. The heart of this process is the renewal of the business in order to sustain its competitive advantage and its superior financial performance."(*The Delta Project, Arnoldo Hax, pg 123*). This section is dedicated to identifying the requirements for innovation and tying them into each strategic thrust.

Innovation Requirements

The team has identified several steps to meeting the intent of the firm wide strategic thrusts from an innovation perspective. This section will talk briefly about the three main groupings of the firm wide thrusts (see table 43). The team has included a chart of positions and what the firm should focus on for each position of the Delta Model (see table 42).

	Description of Role		
	Focus of Attention	Output	Objective
Best Product	Common Product Platform	Family of Products	First to Market - Dominate Design
Total Customer Solution	Customer's Platform	Joint Development	- Enhance Customer Results - Customize bundle of products - Integrate into customer's activities
System Lock In	Open Platform	- Manage Proliferation of Complementors - Breadth/range of applications - Application Interfaces	Harmonized system architecture

Table 42 – Innovation (Technology) Position Analysis

Solidify the Offerings

Solidifying its offerings with innovation in mind requires the firm to standardize on Web Services at the preferred mechanism for enabling services at the various interfaces in the SOA enabled as well as SOA enabling products offered by the firm. Further, as leader in establishing and propagating leading standards from the various committee's it should ensure that its products are fully standards compliant and thus maximally interoperable with the broader set of products in the market. Use of common technology platforms, tools, code base and infrastructure will ensure maximum reuse and faster development cycles.

Build Internal Capabilities

At a minimum, the firm must ensure that it is able to harness the appropriate operational enterprise systems in order to improve all aspects of the value chain. From a SOA products capability perspective, the firm must create and nurture a firm wide SOA committee that performs actions including coordination of development effort among businesses units, ensuring compliance of products to standards, acting as the mouthpiece of SOA information and knowledge inside the firm and finally acting as the innovation funnel along with the Common Services business unit in ensuring that all parties are aligned along the SOA vision.

Build Market Share

The ultimate goal of any initiative in the firm is to yield greater revenues and profits for the firm. Innovation in building market share comes in the form of developing and using tools that improve the learning of the SOA technologies and the firm's products among its workforce including Sales and Marketing. This is turn enables them to be able to convey the value of the firm's solutions with greater confidence to the customers. In addition to this, it is important that the firm use the latest demonstration and virtualization technologies in all aspects of the sales and support process since it is able to show the functioning of the products "live" to a customer at any time and any place.

	Strategic Thrusts	Innovation (Technology) Requirements
	Solidify Offerings	
1	Define and build the SOA Security Management Offerings	Develop interfaces for the firm's SOA enabling as well as SOA enabled products using the relevant standards from governing bodies such as OASIS and W3C. Standardize on web services as the company's choice implementation of SOA not only for its own products to interoperate, but also for integrating complementary products from the firm's extended partner ecosystem. Use of Java technologies for the implementation of Web services. Use of open source tools such as Eclipse and other development tools to allow writing of the code base. Reuse of the firm's source code and control system along with all accompanying software, systems and processes across the various business units to allow maximum reuse of development and testing infrastructure Create a Wiki towards collaboration and exchange of ideas across the business units Use of appropriate SDLC (Software Development Life Cycle) methodologies such as Waterfall method, Agile programming etc. in order to optimize the software development time and costs.
2	Define and build the SOA Business Services Optimization (BSO) Offerings	
3	Define and build the SOA Storage Management Offerings	
4	Define and Build the SOA Enterprise Service Management (ESM) Offerings	
5	Develop Common Integration Platform	
	Build Internal Capabilities	
6	Hire personnel and develop technical capabilities in the engineering organization.	Seek out thought leaders in the technology as well as applicable verticals in order to drive the initiative forward Work closely with institutions of higher learning such as universities and colleges to keep a finger on the pulse of innovation in the academic world Take advantage of the highly technical workforce in emerging nations such as India and China to complement and add to the existing workforce in these nations.
7	Hire personnel and develop technical capabilities in the various services organizations including support and technical services.	
8	Become an integral part of the various standards committee's	Submit recommendations and contribute to the standard committee as frequently as possible in order to add credibility to the firm's technical prowess.
9	Build and educate sales organization on SOA	Use the appropriate Knowledge Management system as well as electronic learning systems in order to make learning of SOA technologies as well as the firm's products very seamless.

	Strategic Thrusts	Innovation (Technology) Requirements
10	Build an internal SOA Committee	Use appropriate collaboration systems as well as process/time scheduling systems to ensure maximum contact between various business units towards the proper functioning of the internal firm-wide SOA Committee.
Build Marketshare		
11	Increase SOA solution sales	Provide Sales with the latest learning tools that can be accessed from any location at any time in order to improve timeliness and accessibility to information and leaning. Provide Sales with pre-canned product simulations to demonstrate product functionality "live" to the customer.
12	Increase education of partners on the firm's SOA products towards increased sales and deployment	Provide Partners with the latest learning tools that can be accessed from any location at any time in order to improve timeliness and accessibility to information and leaning. Provide Partners with pre-canned product simulations to demonstrate product functionality "live" to the customer.
13	Build external credibility in SOA space	Demonstrate product functionality as frequently as possible through use of latest demonstration technologies at a variety of technology fairs, forums and customer visits.

Table 43 -The Strategic Agenda for the firm and Innovation requirements

Identifying the STU's

The Strategic Technology Units (STU) is a planning tool used to characterize the strategic response to the technological requirements mentioned earlier. It includes the skills or disciplines that are applied to a particular product, service, or process addressing a specific market need. Identifying all the relevant STU's of the firm is a critical task in the development of technology strategies. It produces the full portfolio of the key technologies the firm needs to embody in its products and processes in order to achieve competitive advantage.

We have listed the eleven STU's that are critical to the competitive advantage of our firm and include everything from the design and creation of software along with its packaging, marketing and sale to the customer.

	STU	Potential Source of Innovation
1	Software Architecture and Design	This category of firm-wide or business unit wide technology provides the ability to handle the architecture and design of the software products and solutions created by the firm.
2	Software Engineering	This category of firm-wide or business unit wide software provides the ability to handle the actual construction of the software products and solutions from the firm.
3	Build and Release Technology	This category of firm-wide or business unit wide software provides the ability to handle availability of the software on multiple platforms along with ensure proper release cycles for this software.
4	Software Testing and Diagnostics Technology	This category of firm-wide or business unit wide software and hardware tools provide the ability to test all aspects of the software and systems including performance, usability, deployment and management.
5	Technical Support Systems	This category of firm-wide or business unit wide software and hardware tools provide the ability to handle all technical support through various channels (telephone, web etc.) on the various products from the firm.
6	Project and Portfolio Management Technology	This category of firm-wide or business unit wide software provides the ability to handle prioritization of resources against initiatives along with tracking the costs and schedules of projects.

	STU	Potential Source of Innovation
7	Collaboration Technology	This category of firm-wide or business unit wide technology provides the ability to perform collective development as well as facilitate exchange of ideas and thoughts on all aspects of software development, marketing and sales.
8	Demonstration Technology	This category of firm-wide or business unit wide technology provides the ability to perform demonstration of the solutions both internally to members of the sales force and externally to perspective customers as well as partners.
9	Learning Technology	This category of firm-wide or business unit wide technology provides the ability to perform advanced learning on various aspects of the company's internal operations as well as external skills ranging from technology skills or management skills through electronic learning.
10	ERP Systems	This category of firm-wide technology is required to run various parts of the value chain including accounting, human resource management and procurement.
11	CRM Systems	This category of firm-wide technology is required to facilitate all aspects of Customer management including contact management, lead generation, sales forecasting, account management etc.

Table 44 – Identification of Strategic Technology Units (STU's) for Competitive Advantage

Technology Attractiveness of the STU's

Once the STU's have been identified, one of the steps in the environment scanning process includes the assessment of the degree of attractiveness of each STU. An STU with a high degree of attractiveness will significantly enhance the competitiveness of the firm when it is implemented. The various factors used towards determining technology attractiveness include ones that are normally external to the firm.

STU #1	Software Architecture and Design					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost					X
	• Performance					X
	• Quality					X
	• Differentiation					X
3	Proprietary positions available					X
4	Rate of technological change					X
5	Impact on entry barriers				X	
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 45 - Technology Attractiveness for STU #1

STU #2	Software Engineering					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost					X
	• Performance					X
	• Quality					X
	• Differentiation					X
3	Proprietary positions available				X	
4	Rate of technological change				X	
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility			X		
	• Complexity				X	

Table 46 - Technology Attractiveness for STU #2

STU# 3	Software Build and Release Technology					
	Factors contributing to Technology Attractiveness	Very Weak	Weak	Even	Strong	Very Strong
1	Potential for enhancing competitive advantage in:					
	• Product application			X		
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance			X		
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change			X		
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 47 - Technology Attractiveness for STU #3

STU# 4	Software Testing and Diagnostics Technology					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available				X	
4	Rate of technological change				X	
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 48 - Technology Attractiveness for STU #4

STU# 5	Technical Support Systems					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application			X		
	• Process application				X	
2	Impact on value-added chain					
	• Cost			X		
	• Performance			X		
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change			X		
5	Impact on entry barriers				X	
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 49 - Technology Attractiveness for STU #5

STU# 6	Project and Portfolio Management Technology					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change			X		
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 50 - Technology Attractiveness for STU #6

STU# 7	Collaboration Technology					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available				X	
4	Rate of technological change				X	
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 51 - Technology Attractiveness for STU #7

STU# 8	Demonstration Tools					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application			X		
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change				X	
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 52 - Technology Attractiveness for STU #8

STU# 9	Learning Tools					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product application				X	
	• Process application				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance			X		
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change				X	
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility				X	
	• Complexity				X	

Table 53 - Technology Attractiveness for STU #9

STU# 10	ERP Systems					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product			X		
	• Process				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change			X		
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility			X		
	• Complexity			X		

Table 54 - Technology Attractiveness for STU #10

STU# 11	CRM Systems					
	Factors contributing to Technology Attractiveness	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Potential for enhancing competitive advantage in:					
	• Product			X		
	• Process				X	
2	Impact on value-added chain					
	• Cost				X	
	• Performance				X	
	• Quality				X	
	• Differentiation				X	
3	Proprietary positions available			X		
4	Rate of technological change			X		
5	Impact on entry barriers			X		
6	Impact of alternative technologies					
	• Maturity and volatility			X		
	• Complexity			X		

Table 55 - Technology Attractiveness for STU #11

Technology Attractiveness/Technology Strength Portfolio Matrix

After the identification of STU's, one more step is that of defining a portfolio matrix that graphically displays all of the STU's along two dimensions; the technology attractiveness and the technology strength. Recall that the technology strength would normally be compared again on a per STU basis, but for the purposes of this document, we have used to compare our firm against that of the competition.

We would determine either subjectively or by assigning different weights to each factor to create a single measure of technology strength and attractiveness. The circles identify the existing position of each STU while the dots denote the future position. Ideally, we would like all STU's in the high-attractive and high-strength cell of the matrix such as STU #1.

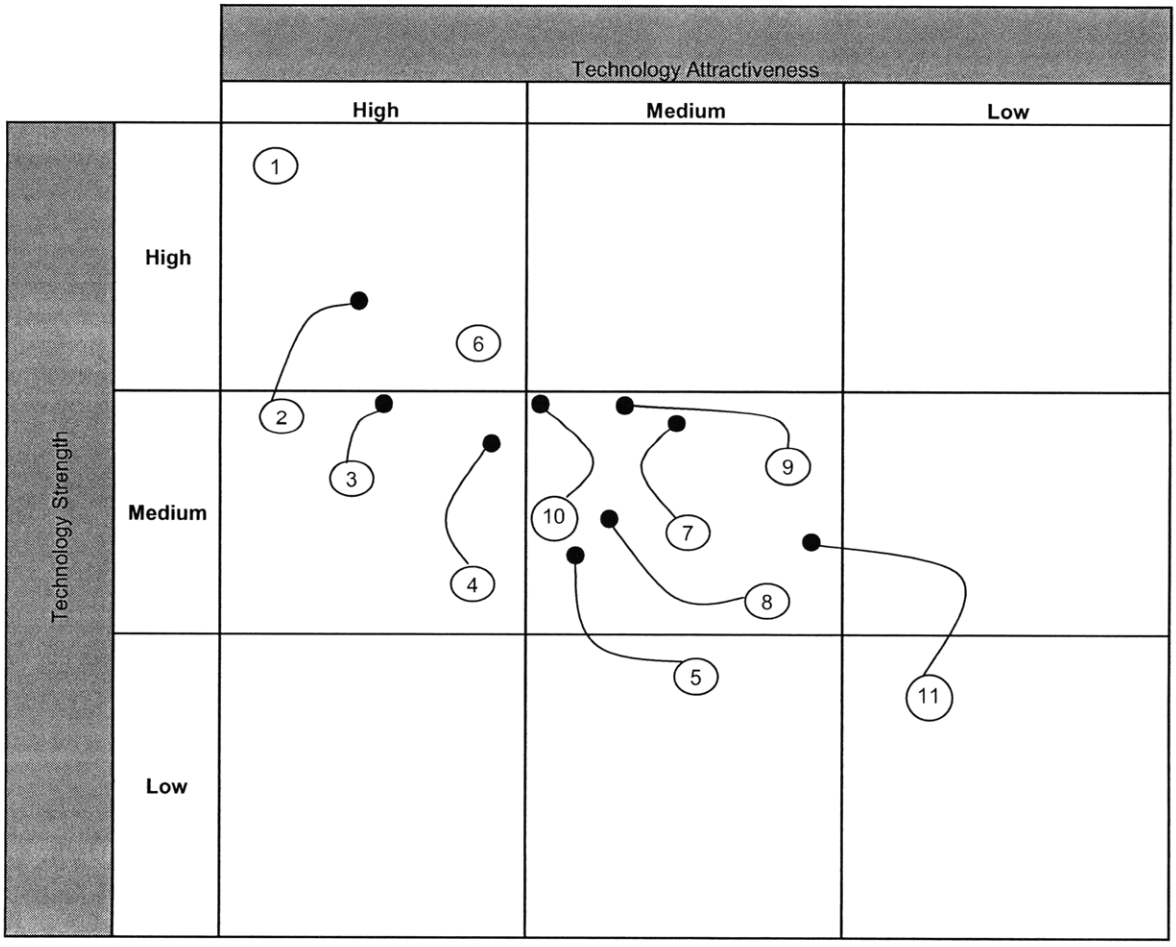


Table 56 - Technology Portfolio Analysis for the firm

Technology Strength comparison

During the environment scanning process, we also benchmark our firm against that of our primary competitors, two in this case – IBM and HP. It can be seen from the tables below that both competitors have certain advantages in areas such as rate of innovation and resource allocation due to their size. However, considering our own firm's stature, one can see that any differences in the factors studied can be narrowed in time with the correct strategy and tactic.

Competitive Profile of IBM vs. the Firm						
	Factors contributing to Technology Strengths	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Rate of technological Innovation				X	
2	Technology productivity			X		
3	Rate of return in technological investment				X	
4	Resources allocated				X	
5	Impact of rate of new product introduction			X		
6	Impact on process capabilities			X		
7	Impact on technology-based diversification			X		
	Royalties or Sales of technology			X		
	Training time of people on new technology			X		
8	Level of technological competence				X	
9	Human resources				X	
10	Patent Positioning					X

Table 57 - Competitive Profile of IBM vs. the Firm

Competitive Profile of HP vs. the Firm						
	Factors contributing to Technology Strengths	**Very Weak**	**Weak**	**Even**	**Strong**	**Very Strong**
1	Rate of technological Innovation				X	
2	Technology productivity				X	
3	Rate of return in technological investment			X		
4	Resources allocated				X	
5	Impact of rate of new product introduction			X		
6	Impact on process capabilities			X		
7	Impact on technology-based diversification			X		
	Royalties or Sales of technology			X		
	Training time of people on new technology			X		
8	Level of technological competence				X	
9	Human resources				X	
10	Patent Positioning				X	

Table 58 Competitive Profile of HP vs. the Firm

Critical External Factors to Innovation

Another dimension that needs to be explored in the environmental scan is the external factors that affect all players in the industry and how these factors can affect the industry in a positive and negative way.

Innovation (Technology) Environmental Scan		
	Impact	
Critical External Factors	Positive (Opportunities)	Negative (Threats)
Market Factors		
Need for SOA in large Fortune 500 corporations in mature and developed economies such as North America, Europe and Japan.	Hardware costs are approaching commoditization and thus, the biggest opportunities in SOA implementations are typically software and value added services. The target customer base prefers to deal with providers that can offer integrated solutions and one-stop shopping.	Due to the infancy of the market coupled with lack of clear leaders, even the most mature customers are unclear on their goals to deploy SOA.
Competitive Factors		
Large pool of players in various aspects of SOA. However, only three or four vendors have the market reach as well as the horizontal breadth of IT management solutions available.	Our firm has the resources to create or acquire functionality in order to meet every aspect of the end-to-end solution.	The first mover advantage can be easily lost due to the nature of the software industry. The ability of a competitor to target the firm's own customers is a constant threat.
Economic Factors		
In spite of globalization and the rise of India/China aka "Chindia", the need for SOA solutions exists in mature and large corporations that mainly exist in North America, Europe and Japan.	Companies in these mature markets are responsible for large technology expenditures that contributes to the success of the overall ecosystem of IT suppliers. Our firm benefits from the increased IT spending of these customers as part of the ecosystem.	IT spending can be very cyclical. As firms try to cut IT budgets and seek greater value out of their existing IT investments, it affects our own firm's revenue potential. This revenue growth further drives our firm's ability to dedicate capital towards innovation and new product development.
Government and Political Factors		
N/A		

Innovation (Technology) Environmental Scan		
	Impact	
Critical External Factors	Positive (Opportunities)	Negative (Threats)
Regulatory Factors		
Scandals in North American and Japanese corporations have forced the government to enact strict compliance and regulatory laws such as SOX (Sarbanes Oxley).	Recent regulatory requirements that are driving greater corporate oversight and governance require implementation of IT solutions thus causing greater demand for our firm's solutions and technology expertise.	Expense associated with regulatory compliance forces customers to look for more cost efficiencies thereby forcing our own firm in work in expedited development cycles. Liabilities associated with the firm's products increase proportionally when these are deployed by customers to address the compliance issues. This requires high quality in all the products that are developed or integrated.
Technology Factors		
Infancy of technology standards to implement SOA using web services or other methodologies.	The firm has the ability to lead the market and set the standards in various aspects of the SOA lifecycle including service management and governance.	Lack of mature standards and clear direction will require the firm to choose its product development and deployment technologies carefully. The firm is betting on the success of Web Services as the predominant SOA enabler.
Legal Factors		
N/A	-	-
Social Factors		
N/A	-	-
Environmental Factors		
N/A	-	-

Innovation (Technology) Environmental Scan		
	Impact	
Critical External Factors	Positive (Opportunities)	Negative (Threats)
Human Resources and Labor Factors		
Rise of cost effective IT labor from India and China. Outsouring of back office functions to India and China through BPO (Business Process outsourcing) firms.	Reduced cost of engineering and product development through offshore development centers equates to lower cost of innovation. Further, it gives the firm an opportunity to engage in a broader set of development projects with the same amount of capital.	Cost of labor in India are also increasing rapidly thus narrowing the gap in wages between the firm's home base and offshore centers. This may curtail the firm's ability to dedicate greater and greater resources towards product innovation worldwide.

Table 59 – Critical factors for Innovation

Summary of Critical External Factors

As depicted by the scan of the external factors the firm will be affected in multiple ways from an innovation perspective by the factors that it faces in the space.

Internal Scrutiny

The firm has several policies that effect its competitive position in the market place. We will examine these policies. On the whole this is another area that the firm puts itself into the very elite group of top players due to these players size, scope and experience level.

These policies will allow us to gauge the viability of our position in the long and short term in the Delta Model. These assessments will drive the strategic thrusts of innovation.

Decision Category	Description of Policy	Strength	Weakness
Innovation Intelligence	* Use of relationships with suppliers and partners to obtain information on latest technology trends and needs. * Participation of employees in technology fairs, conferences and symposiums to keep a pulse on the newest technology developments. * Identification of STU's and understanding the technology needs of the firm on a regular interval.	Good understanding of current marketplace and competitor positions.	Time consuming and manual since it is dependant on the employee of the firm to carry out the intelligence gathering task and then disperse it within the organization.
Product Scope & Introduction of new products	* Constant communication with the market place ensures that the needs of the current as well as prospective customers are clearly available to the firm when designing new products.	Good understanding of customer needs ensures that the firm's future products will be well accepted.	Complete reliance on customer needs may impede independent and ground breaking thought that can potentially produce disruptive technologies.
Technology Selection	* Formal process for technology evaluation and selection exists on a firm-wide context as a result of relationships with a large and varied supplier base. * Relationships with technology vendors through the firm's alliance and business development personnel ensures constant feedback on technology trends and market sizes that in turn enables greater accuracy on the underlying software platforms that are supported.	Under certain circumstances, the individual business units and development teams are allowed to choose technology that will enable the fastest and most efficient product development cycles thus providing flexibility in the technology selection process.	Formal processes and existing partnerships can inadvertently pose as a roadblock when trying to selecting the best technology solutions for a given problem.

Decision Category	Description of Policy	Strength	Weakness
Timing of new technology introduction	Extensive market analysis and feedback from customer facing organizations (Sales, Marketing, Product Management) leads to product requirements that are used towards planning incremental changes to existing products as well as introducing new products.	* Very flexible and market-oriented approach. * Leverage experience with technology and customers.	Due to focus on customer needs as the primary guide for new products, the firm may inadvertently miss a more important and disruptive innovation.
Modes of technology acquisition	* Use of commercially available technology to solve firm wide operational needs such as email systems, ERP systems and CRM systems. * Use of firm's own IT management products where applicable. * Use of third party components to supplement internally developed components in product engineering.	* Use of firm's own technology provides a very cost effective means of procuring products needed manage IT infrastructure within the firm. * Use of third party components (where applicable) enables firm's engineering teams to focus on core competencies. * Use of company wide norms and standards for technology acquisition ensures uniformity and compliance within the firm.	* Lack of flexibility in company wide norms can cause delays or prohibit obtaining the best-of-breed solutions due to existing partnerships and supplier discounting.
Horizontal strategy of Technology	* Use of common business processes and programs throughout the firm regardless of geographic location or business units is enabled through the use of ERP and CRM systems. * Use of common technology stack consisting of reusable software components that can be used in product construction across all business units.	* Use of firm wide technology for business processes ensures uniformity and increased integration of the global work force. * Use of common technology stack enables rapid product development and common look and feel among the firm's products due to component reuse and decreased learning.	Complexity of scope due to global presence as well as time taken to integrate acquired firms can cause process delays as well as divergent technology strategies among the various departments and business units within the firm.

Decision Category	Description of Policy	Strength	Weakness
Project Selection, Evaluation, Resource Allocation and Control	* Use of the firm's own world-class project and portfolio management products across all software development projects. * Use of a firm wide product development methodology to ensure proper project selection, documentation, resource allocation and tracking. * Use of customer needs in determining projects that will address these needs through new products or existing product enhancements.	* Superior technology for project and portfolio management enables better governance as a result of better quality and insightful reporting on project status. * Visibility of all of the firm's projects along with current status to key product design parties such as product management and engineering ensures that the firm is in sync as a whole in regards to its product strategy.	Due to size of the firm along with global presence and competing priorities, the correct projects might not be chosen. Lack of a proper "idea funnel" may cause lack of funding for potentially lucrative projects in spite of the presence of superior technology and project management i.e. potential for loss of long term innovations.
Innovation, Organization and Managerial Infrastructure	* Global development presence ensures effective partitioning of innovation across high cost and low cost centers. * Organization of the firm along the lines of a "business-unit" structure with each business unit bearing complete responsibility for product lines along a given technology category.	* Advantages of a business unit structure include autonomy in setting a unit specific strategy and pursuing it while tapping into the resources of the larger firm and sharing technology and expertise with other business units. * The firm can take advantage of a global presence by shifting less value added work to offshore development centers thereby decreasing operating costs while continuing to keep cutting edge innovation work close to home and the immediate customer base.	The concept of shifting low value added work offshore should be balanced with keeping offshore employees motivated through appropriate mechanisms in order to continue promoting a unified company and a single vision of becoming the leading IT Management software vendor.

Table 60 - Internal scrutiny for Innovation

Innovation Strategic Agenda

The final step in this section is to define specific thrusts that must be performed to carry out the firm's innovation strategy. The team has identified ten strategic thrusts shown in the table in the next page. Each on is broken down like the firm's overall strategic thrusts into the critical dimensions of:

- The parties needed to oversee the mission will list out the key participants and contributors within the firm that must buy into and actively participate and single out one position to lead the effort.
- The key factors for the management of the process and targets
- The key milestones and projected dates
- The resources required to achieve the strategic thrusts and meet the proposed milestones
- A statement of benefits in pursuing the strategic thrust.
- An opinion of how comprehensive must firm must develop this thrust
- An opinion of how much of a stretch this strategic thrust is for the firm.
- The vulnerability of competitors to appropriate the firm's competitive advantage if the firm pursues this strategic thrust.

The Strategic Agenda for the Firm's Innovation (Technology)																				
		Security			Storage			ESM			BSO			CSG			HR	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	Performance Metrics
Solidify Offerings																				
1	Develop capabilities in the end-to-end SOA solution stack by developing partnerships with leading Application Platform vendors and ensuring that our firm's SOA management products are able to coexist with the broadest set of these components.	2			2			2			2			2				1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.
2	Develop capabilities in the end-to-end SOA solution stack by developing partnerships with leading XML Gateway vendors and ensuring that our firm's SOA management products are able to coexist with the broadest set of these components.	2			2			2			2			2				1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.

The Strategic Agenda for the Firm's Innovation (Technology)																				
		Security			Storage			ESM			BSO			CSG			HR	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	Performance Metrics
3	Develop capabilities in the end-to-end SOA solution stack by developing partnerships with leading Orchestration engine vendors and ensuring that our firm's SOA management products are able to coexist with the broadest set of these components.	2			2			2			2			2				1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.
4	Develop capabilities in the end-to-end SOA solution stack by developing partnerships with leading Contract Management System vendors and ensuring that our firm's SOA management products are able to coexist with the broadest set of these components.	2			2			2			2			2				1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.

The Strategic Agenda for the Firm's Innovation (Technology)																				
		Security			Storage			ESM			BSO			CSG			HR	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	**Performance Metrics**
5	Continue to strengthen the firm's existing end-to-end SOA enabling components including Security, Policy Management, Registry, Asset Management (CMDB) and ESM.	2			2			2			2			2				1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.
Build Internal Capabilities																				
6	Continue to refine the existing SDLC (Software Development Life Cycle) methodology in order to increase efficiency and expedite product development cycles.	2		2	2		2	2		2	2		2	2		2		1	I	Decreased development cycles and increased quality of products.
7	Continue to integrate components from the common technology stack into the existing products in order to create greater interface uniformity and promote component reuse while reducing development costs	2			2			2			2			2				1	I	Decreased development costs associated with OEM and license contracts as a result of using the common stack components.

The Strategic Agenda for the Firm's Innovation (Technology)																				
		Security			Storage			ESM			BSO			CSG			HR	Other		
	Strategic Thrusts	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services	Engineering	Sales/Marketing	Support/Services			Business Process	Performance Metrics
8	Continue to introduce advanced collaboration tools such as Wiki's in order to promote exchange of ideas and greater innovation.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	I	Increased idea generation leading to more concrete product features and improvements.
9	Continue to invest in the most comprehensive and advanced learning tools in order to facilitate greater knowledge assimilation as well as training on both the firm's products as well as external competencies.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	I	Increased productivity across various teams in engineering, product management, marketing and sales.
Build Marketshare																				
10	Continue to introduce advanced demonstration tools in order to promote the firm's products and solutions to the larger market.	2	2		2	2		2	2		2	2		2	2			1	I	Increased sales and deployment of the firm's SOA enabling solutions thus leading to larger revenues.
	Level 1 will be the champion of the thrust within the company																			
	Level 2 will be the parties that are integral to the thrust																			
	Level 3 will include the interested parties within the company																			

Table 61 - Innovation Strategic Agenda of the firm

Develop capabilities in the end-to-end SOA solution stack component - Application Platforms

As mentioned in the appendix containing the list of components found in the end-to-end SOA solution, an Application platform acts as the core service container. We need to develop partnerships or acquire the product from another vendor.

Name:	Develop capabilities in the end-to-end SOA solution stack component - Application Platforms
Description:	Add Application Platform component offering to the SOA solution stack
Responsible Manager:	Common Services Group Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant products up
	Upgrades from previous versions of products up
	Sales of complementary products up
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to certify the interoperability of various Application Platforms with the existing products in our SOA platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of certification and interoperability testing of the SOA compliant products.

Develop capabilities in the end-to-end SOA solution stack component – XML Gateway

As mentioned in the appendix containing the list of components found in the end-to-end SOA solution, an XML Gateway acts as the core security gate as well as content based router at the perimeter of the SOA infrastructure. We need to develop partnerships or acquire the product from another vendor.

Name:	Develop capabilities in the end-to-end SOA solution stack component – XML Gateway
Description:	Add XML Gateway component offering to the SOA solution stack
Responsible Manager:	Common Services Group Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant products up
	Upgrades from previous versions of products up
	Sales of complementary products up
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to certify the interoperability of various XML Gateways with the existing products in our SOA platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of certification and interoperability testing of the SOA compliant products.

Develop capabilities in the end-to-end SOA solution stack component – Orchestration Engine

As mentioned in the appendix containing the list of components found in the end-to-end SOA solution, an Orchestration Engine acts as the service aggregator in order to create larger services in increased scope that mirror that actual business processes and workflow. We need to develop partnerships or acquire the product from another vendor.

Name:	Develop capabilities in the end-to-end SOA solution stack component – Orchestration Engine
Description:	Add Orchestration Engine component offering to the SOA solution stack
Responsible Manager:	Common Services Group Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant products up
	Upgrades from previous versions of products up
	Sales of complementary products up
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to certify the interoperability of various Orchestration Engines with the existing products in our SOA platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of certification and interoperability testing of the SOA compliant products.

Develop capabilities in the end-to-end SOA solution stack component – Contract Management

As mentioned in the appendix containing the list of components found in the end-to-end SOA solution, a Contract Management system is used to manage the contract between the service consumer and the service provider. We need to develop partnerships or acquire the product from another vendor.

Name:	Develop capabilities in the end-to-end SOA solution stack component – Contract Management
Description:	Add Contract Management component offering to the SOA solution stack
Responsible Manager:	Common Services Group Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant products up
	Upgrades from previous versions of products up
	Sales of complementary products up
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to certify the interoperability of various Contract Management systems with the existing products in our SOA platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of certification and interoperability testing of the SOA compliant products.

Continue to strengthen the firm's existing components in the end-to-end SOA solution stack

As mentioned in the appendix, there are various components in an end-to-end SOA solution. The firm is already in a good position due to its current product portfolio that contains some of these components. We need to ensure that the respective service interfaces in these existing components are completed and tested.

Name:	Continue to strengthen the firm's existing components in the end-to-end SOA solution stack
Description:	Solidify all existing components in the SOA solution stack
Responsible Manager:	Common Services Group Manager
Other Key Participants:	Sales and Marketing Manager – ensures alignment with customer needs
Other Important Contributors:	Tier 1 and 2 IT and Business Managers
Key indicators for Management	
Control and Targets:	Sales of SOA Compliant products up
	Upgrades from previous versions of products up
	Sales of complementary products up
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	15 months from start of Strategy
Resources Required:	Identify and dedicate a team to certify the interoperability of all the existing products in our SOA platform.
	Account managers to assess customer's needs
Statement of Benefits	Increased customer bonding
	Increased Sales volume
	Better understanding of the customer's needs with regards to SOA
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to solidify this area due to the infancy of the SOA market and the possible loss of time and effort if there is not enough demand for the products to offset the cost of certification and interoperability testing of the SOA compliant products.

Continue to refine existing SDLC (Software Development Life Cycle) methodology

As a large software vendor and one of the leaders in the IT Management software space, the firm's engineers create and sustain some of the most innovative and widely deployed software products that customers have come to depend on. It is imperative that the firm use the appropriate product development methodologies.

Name:	Continue to refine the existing SDLC (Software Development Life Cycle) methodology
Description:	Evaluate and use the appropriate development methodologies in the engineering organization
Responsible Manager:	Projects and Portfolio Management Office Manager
Other Key Participants:	Engineering Managers of all business units
Other Important Contributors:	N/A
Key indicators for Management	
Control and Targets:	Reduced product development times
	Increased product quality
First Milestone Description:	Release of comprehensive SOA solution stack
First Milestone Date:	6 months from start of Strategy
Resources Required:	Lead developers to identify and evaluate the appropriate methodologies through use in smaller scale pilot projects or sub-projects within larger ones.
Statement of Benefits	Increased customer bonding due to higher quality products
	Increased Sales volume due to an increase in the number of products in the pipeline
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to improve the internal efficiency of the engineering organization.

Use of common components across various products from the firm

As a large software vendor and one of the leaders in the IT Management software space, the firm's engineers create and sustain some of the most innovative and widely deployed software products that customers have come to depend on. Ease of product installation, deployment and common interfaces decreases overhead for the firm as well as the customer.

Name:	Use of common components across various products from the firm
Description:	Evaluate and use the appropriate common technology components within all the products from across the business units
Responsible Manager:	Technology Office Manager
Other Key Participants:	Engineering Managers of all business units
Other Important Contributors:	N/A
Key indicators for Management	
Control and Targets:	Reduced product development times
	Increased product quality
First Milestone Description:	Integration of at least two common technology components into the various products
First Milestone Date:	6 months from start of Strategy
Resources Required:	All developers to have access to common components and mangers along with lead developers to ensure the integration of the identified common components into ongoing and future product development projects.
Statement of Benefits	Increased customer bonding due to better customer experience
	Increased Sales volume due to ease of use as well as expedited supply of products
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to improve the internal efficiency of the engineering organization.

Use of collaboration tools across the firm

As a large software vendor and one of the leaders in the IT Management software space, the firm's employees create and sustain some of the most innovative and widely deployed software products that customers have come to depend on. In order to ensure innovation towards these products, the developers and other personnel such as those from product management as well as marketing must be able to collaborate seamlessly thereby increasing the exchange of ideas and greater productivity.

Name:	Use of collaboration tools across the firm
Description:	Evaluate and use the appropriate collaboration technology across all the functions in the various business units
Responsible Manager:	Central IT Office Manager
Other Key Participants:	Other Managers of various functions across all business units
Other Important Contributors:	N/A
Key indicators for Management	
Control and Targets:	Greater product improvement ideas
	New product features
	Increased product quality
First Milestone Description:	Integration of at least one collaboration technology into the various functional departments
First Milestone Date:	3 months from start of Strategy
Resources Required:	The IT Office inside the firm should identify and evaluate a suitable collaboration technology product in consultation with the other personnel within the firm.
Statement of Benefits	Increased innovation
	Increased communication across various departments
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to improve the collaboration within the firm.

Use of learning tools across the firm

As a large software vendor and one of the leaders in the IT Management software space, the firm's employees create and sustain some of the most innovative and widely deployed software products that customers have come to depend on. In order to ensure innovation towards these products, the developers and other personnel must be able to access training and learning systems that keep them updated on the latest knowledge and skills associated with their function and thus greater productivity.

Name:	Use of learning tools across the firm
Description:	Evaluate and use the appropriate learning technology across all the functions in the various business units
Responsible Manager:	Central IT Office Manager
Other Key Participants:	Other Managers of various functions across all business units
Other Important Contributors:	N/A
Key indicators for Management	
Control and Targets:	Greater job satisfaction
	Improved career paths due to transferable skills
First Milestone Description:	Integration of at least one new learning system encompassing technical as well as management disciplines across the various functional departments
First Milestone Date:	3 months from start of Strategy
Resources Required:	The IT Office inside the firm should identify and evaluate a suitable learning technology product in consultation with the other personnel within the firm.
Statement of Benefits	Increased innovation
	Increased functional capabilities
	Decreased training costs
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to improve the training and learning within the firm.

Use of demonstration tools across the firm and larger customer base

As a large software vendor and one of the leaders in the IT Management software space, the firm's employees create and sustain some of the most innovative and widely deployed software products that customers have come to depend on. In order to ensure increased sales as a result of an enhanced product demonstrability process, the firm needs to invest in the latest demonstration and virtualization technology.

Name:	Use of demonstration tools across the firm and larger customer base
Description:	Evaluate and use the appropriate demonstration technology across all the sales departments in the various business units
Responsible Manager:	Technology Office Manager
Other Key Participants:	Sales of various functions across all business units
Other Important Contributors:	Central IT Office Manager
Key indicators for Management	
Control and Targets:	Increased sales opportunities closed percentage
	Improved customer experience
First Milestone Description:	Integration of at least one new demonstration technology system across the various sales departments
First Milestone Date:	6 months from start of Strategy
Resources Required:	The Technology Office inside the firm should identify and evaluate a suitable demonstration technology product in consultation with the other personnel within the firm. The Central IT Office is to assist in the firm wide implementation.
Statement of Benefits	Increased sales
	Decreased sales costs
Vulnerabilities:	This is an internal process with limited vulnerabilities. The vulnerability lies in the time spent trying to improve the sales capability within the firm.

Metrics

Aggregate Metrics

The team has identified many elements that will make up the firm's suggested strategy to be successful its development of SOA compliant offerings and getting those products to market. With these elements in mind we must set some objective metrics to help us gauge the strategy and its implementation as the firm progresses down this path. These metrics are an effective and crucial way to communicate back to the management of the firm the progress of the initiative.

Financial Evaluation

To measure the financial success of a project in a firm of this size requires a very accurate reporting infrastructure down to the minute level. The firm has a global reporting system that tracks many metrics throughout the firm that can be used as base points. The challenge of using these measures for the SOA initiative is that the initiative covers many of the firm's current offerings. The rework or updating of these products may skew the accountant's analysis when trying to determine the NPV of the project. While it may be easy to assess what revenues come from totally new offerings, it can be debated that the revenues coming from existing products that have been made SOA compliant are specifically due to compliance or just sales for other reasons.

This very reason provides the company with its biggest challenge in assessing the NPV of the initiative. One of the most critical pieces in measuring the success of any initiative taken up by a firm is the financial assessment of the initiative. Unfortunately due to the scope and confidential nature of the initiative, the firm's financial data will be withheld from this thesis. Instead the team projected various financial measures forward to 2010 based on publicly available financial data. This time frame was chosen because the availability of industry analysts reports for 2007 and 2010.

The projections for the upcoming years are depicted with and without the influence of SOA. In either case the revenue growth remains constant at 7.5% as it has for the past several years. Research and development and SG&A also are held constant.

Without the firm's entry into the SOA market the firm will increase its net income from $279 million to close to $507 million over the next 4 years. The SOA market is expected to be $500 million this year skyrocketing to $43 billion in 4 years. This perhaps can be explained by the increased adoption of the standard as costs decline and the ease of implementation increases. The team has chosen very minute percentages of the SOA market in its projections for the firm. As you can see by the projections at 5% market share the firm's net income will double by 2010 to over $1 billion.

In Millions of USD (except for per share items)	12 months Ending 2001-03-31	12 months Ending 2002-03-31	12 months Ending 2003-03-31	12 months Ending 2004-03-31	12 months Ending 2005-03-31	12 months Ending 2006-03-31	12 months Ending 2007-03-31*	12 months Ending 2008-03-31*	12 months Ending 2009-03-31	12 months Ending 2010-03-31
Total Revenue	**4,190.00**	**2,886.00**	**3,057.00**	**3,332.00**	**3,603.00**	**3,796.00**	4080.00	4386.00	4714.95	5068.57
SOA Revenues							0.00	0.00	0.00	0.00
Cost of Revenue, Total	463.00	283.00	242.00	225.00	230.00	272.00	300	300	300	300
Gross Profit	**3,727.00**	**2,603.00**	**2,815.00**	**3,107.00**	**3,373.00**	**3,524.00**	3780.00	4086.00	4414.95	4768.57
Selling/General/Admin. Expenses, Total	2,120.00	1,675.00	1,384.00	1,318.00	1,353.00	1,597.00	1701.00	1838.70	1986.73	2145.86
Research & Development	695.00	656.00	688.00	703.00	708.00	697.00	756.00	817.20	882.99	953.71
Depreciation/Amortization	1,110.00	1,085.00	605.00	597.00	577.00	583.00	500.00	500.00	500.00	500.00
Unusual Expense (Income)	-184.00	31.00	80.00	168.00	262.00	106.00				
Other Operating Expenses, Total	308.00	304.00	337.00	319.00	334.00	379.00	400.00	400.00	400.00	400.00
Total Operating Expense	**4,512.00**	**4,034.00**	**3,336.00**	**3,330.00**	**3,464.00**	**3,634.00**	**3357.00**	**3555.90**	**3769.72**	**3999.57**
Operating Income	**-322.00**	**-1,148.00**	**-279.00**	**2.00**	**139.00**	**162.00**	**423.00**	**530.10**	**645.23**	**769.00**
Income After Tax	**-591.00**	**-1,096.00**	**-340.00**	**-89.00**	**26.00**	**156.00**	**279.18**	**349.87**	**425.85**	**507.54**

Table 62 - Financial Projections w/o SOA

In Millions of USD (except for per share items)	12 months Ending 2001-03-31	12 months Ending 2002-03-31	12 months Ending 2003-03-31	12 months Ending 2004-03-31	12 months Ending 2005-03-31	12 months Ending 2006-03-31	12 months Ending 2007-03-31*	12 months Ending 2008-03-31*	12 months Ending 2009-03-31	12 months Ending 2010-03-31
Total Revenue	**4,190.00**	**2,886.00**	**3,057.00**	**3,332.00**	**3,603.00**	**3,796.00**	4080.00	4386.00	4714.95	5068.57
SOA Revenues							15.00	88.28	487.08	2149.99
Cost of Revenue, Total	463.00	283.00	242.00	225.00	230.00	272.00	300	300	300	300
Gross Profit	**3,727.00**	**2,603.00**	**2,815.00**	**3,107.00**	**3,373.00**	**3,524.00**	3795.00	4174.28	4902.03	6918.56
Selling/General/Admin. Expenses, Total	2,120.00	1,675.00	1,384.00	1,318.00	1,353.00	1,597.00	1707.75	1878.43	2205.92	3113.35
Research & Development	695.00	656.00	688.00	703.00	708.00	697.00	759.00	834.86	980.41	1383.71
Depreciation/Amortization	1,110.00	1,085.00	605.00	597.00	577.00	583.00	500.00	500.00	500.00	500.00
Unusual Expense (Income)	-184.00	31.00	80.00	168.00	262.00	106.00				
Other Operating Expenses, Total	308.00	304.00	337.00	319.00	334.00	379.00	400.00	400.00	400.00	400.00
Total Operating Expense	**4,512.00**	**4,034.00**	**3,336.00**	**3,330.00**	**3,464.00**	**3,634.00**	**3366.75**	**3613.28**	**4086.32**	**5397.07**
Operating Income	**-322.00**	**1,148.00**	**-279.00**	**2.00**	**139.00**	**162.00**	**428.25**	**561.00**	**815.71**	**1521.50**
Income After Tax	**-591.00**	**1,096.00**	**-340.00**	**-89.00**	**26.00**	**156.00**	**282.65**	**370.26**	**538.37**	**1004.19**

SOA Market

							2007	2008	2009	2010
Total Estimated Size**							500.00	2207.00	9741.70	42999.85
CA Market Share							3%	4%	5%	5%
							15.00	88.28	487.08	2149.99

Table 63 - Financial Projections with SOA

Balanced Scorecard

To create the aggregate metrics the team has developed a balanced scorecard. This scorecard is to serve as the high level benchmark for the company. To make the scorecard a more valid assessment the firm and each identified tier will have to have its own metrics. These scorecards are laid out below.

The Firm's Scorecard

Balanced Scorecard Framework	Financial Perspective (Shareholder Look)	Business Process (Operational Effectiveness	Organizational Learning (Technology)	Customer Perspective (Customer Targeting)
Company	-Revenue and profits Generated by the SOA initiative. -Revenue per segment to assess target viability -Increase profit per engagement - Service Revenue per engagement	- Decreased cost of development - Reduced Support Time per Engagement - Increased reuse of modules and code base	- Percent of Sales coming from the Business Units from the SOA Initiative	- Customer Market Share of SOA - Industry Analysts Coverage - Percentage of new customers

Table 64 - Firm Scorecard

Financial Perspective (Shareholder Look)

As stated in the preceding section one of the biggest challenges to management and the shareholders will be the accurate financial benchmarking of SOA to the firm. In an attempt to get a better picture of this the team suggests the following benchmarks. All the sales of new SOA offerings will be part of this benchmark as well as revenues generated by the new SOA compliant versions of the firm's existing products. Also since the team feels that targeting various segments is crucial to gaining the integration knowledge and expertise, the revenues from the target segments should be carefully accounted for. Lastly the firm's increased presence and focus as a professional service provider can be another benchmark to assess the NPV of the initiative.

Business Process (Operational Effectiveness)

Overall the firm's operational effectiveness can be gauged on several key factors. First, increased efficiencies should lead to reduced development costs. These efficiencies can come from general best practices and off shoring to capture the cheaper labor pool. The materials (documentation) and infrastructure (training and people) developed for the SOA effort will help control costs and should lead to a reduction in the amount of time the support staff has to spend with each of sales opportunities. Lastly the company wide SOA development committee should lead to clearer lines of communication and a greater reuse of the modules and code across business units.

Organizational Learning (Technology)

SOA being a new technology gives the firm an opportunity to learn and develop a new set of competencies. Handled well this can provide the firm the ability to gain competitive advantage and become an industry leader early in the game. One of the commonalities in all the tiers will be the organizational learning. The company develops its products and will sell them to whomever wishes to purchase them throughout the tiers. This internal and external learning can be transferred across any tier. Perhaps the main area of differences will be in the 'targeted' segments. The learning in these tiers will be specific to each segment i.e. how the financial markets can utilize and deploy the products to best suite their needs.

Customer Perspective (Customer Targeting)

The market share the company garners in the industry analyst reports can measure targeting SOA customers. This is another crucial area the company must focus on since so many prospective customers rely on the analysts to provide recommendations on the products the will deploy.

Tier 1 - Vision Partner

Balanced Scorecard Framework	Financial Perspective (Shareholder Look)	Business Process (Operational Effectiveness	Organizational Learning (Technology)	Customer Perspective (Customer Targeting)
Tier 1 - Vision Partner	- Revenue from the Tier increased - Wallet Share of the Tier - Service Revenues - Ongoing maintenance Contracts	- Integration Time per engagement - Support Time per Engagement - Customer Satisfaction Survey - Cost per engagement	- Percent of Sales coming from the Business Units from the SOA Initiative - Percent of Customers moved up to tier 1 due to SOA - Number of Tier 1 clients that undertook SOA initiatives	- Number of Tier 1 customers that undertook SOA Initiatives - Number of Tier 1 customers that undertook SOA Initiatives because of regulations`

Table 65 - Vision Partner Scorecard

Financial Perspective (Shareholder Look)

When looking at the Tier 1 customers from a financial perspective the first measure of the SOA initiative will be to measure the revenues from the tier. The second metric will come from examining each customer and ascertain how much of the customer's IT management wallet the firm has. This is important to achieving the system lock in position of the Delta model. Two other financial indicators will have to be measured by the firm. The increased service offering should reap financial benefits as the firm gets the revenues that would have otherwise gone to the integrators. Lastly one of the best sources of continuing revenue is through maintenance contracts.

Business Process (Operational Effectiveness)

Operational effectiveness in Tier 1 is critical not only to drive revenue but also to instill in the customer a sense of trust. Operational inefficiencies will be readily apparent to any customer with this tight a bond to the firm. An important gauge of the customer's perception of the service and support the company delivers will be the customer satisfaction surveys the firm conducts. As the firm becomes more proficient in the support of the SOA initiative it should become more efficient and drive down the support costs per engagement.

Organizational Learning (Technology)

This tier will provide how well the firm's technology is aimed at its target customers. Since this tier is made up entirely of what the firm feels are its most lucrative customers, any technology developed will have to first suit this tier's needs. This will be benchmarked by how many existing customers undertook SOA initiatives and how many customers moved to this tier due to the firm's competency in this area.

Customer Perspective (Customer Targeting)

To ensure proper customer targeting at this tier in the SOA market the firm needs to gather the data on the number of customers that undertook SOA initiatives because of either the desire to marry IT and business processes or due to reporting and regulatory requirements. With this data the firm will be able to better craft its offerings to this tier.

Tier 2 - Strategic Partner

Balanced Scorecard Framework	Financial Perspective (Shareholder Look)	Business Process (Operational Effectiveness	Organizational Learning (Technology)	Customer Perspective (Customer Targeting)
Tier 2 - Strategic Partner	- Revenue from the Tier - Wallet Share of the Tier - Service Revenues - Product Up Selling to the segment increased due to SOA - Ongoing maintenance contracts - SOA sales from Channels	- Integration Time per engagement - Support Time per Engagement - Opportunities from Channels	- Percent of Sales coming from the Business Units from the SOA Initiative - Percent of Customers moved up to tier 2 due to SOA - Number of Tier 2 clients that undertook SOA initiatives	- Number of Tier 2 customers that undertook SOA Initiatives - Number of Tier 2 customers that undertook SOA Initiatives because of regulations` - Number of Tier 3 and 4 Customers moved to tier 2

Table 66 - Tier 2 - Strategic Partner Scorecard

Financial Perspective (Shareholder Look)

This tier provides another large percentage of the firm's revenues. To assess the financial perspective of the tier we need to examine the overall revenue generated for the firm by customers in this tier. This should be broken down into multiple categories looking at the percentage of wallet share of the customer, the product cross selling due to SOA, and the service revenues. Another financial channel that is represented in this tier is the revenue generated from the channels (integrators) as a good portion of this tier utilizes integrators, not the firm's professional services, at their sites. The final important benchmark for this tier is the amount of recurring revenue through service contracts.

Business Process (Operational Effectiveness)

The business process in this tier is closely associated with the business processes in tier 1. The main difference once again lies in the presence of the integrators. These integrators must be able to deliver the firm's product effectively and efficiently in order for them to increase their engagement opportunities. This can be done through proper training and support provided by the firm.

Organizational Learning (Technology)

Specifically in this tier the differentiated learning that can be developed resides in how the firm gets its offerings out to the channels. This learning ties in directly with operational effectiveness and can drive profits. The other area to assess the firm's ability to learn may reside in the advancement of the technology (SOA) that drives customers up into this tier.

Customer Perspective (Customer Targeting)

Tier 2 customers are very similar to Tier 1 customers in the complexity and scope of their organizations. To ensure proper targeting at this level the firm must look at three criteria. The first factor is the number of existing customers that undertook the initiative of SOA. The second criteria will be the companies that undertook the initiative because of regulatory requirements or concerns. This will allow the firm to focus on certain areas if it becomes a prevalent fact that companies are moving toward SOA due to regulations. The final step in benchmarking the firm's customer targeting effort is to look at the Tier 3 customers that have moved to this tier. This will help the firm to identify the critical drivers.

Tier 3 – The Small /Pilot Customer

Balanced Scorecard Framework	Financial Perspective (Shareholder Look)	Business Process (Operational Effectiveness	Organizational Learning (Technology)	Customer Perspective (Customer Targeting)
Tier 3 - Small/Pilot Customer	- Revenue from the Tier - Wallet Share of the Tier - Service Revenues - Product Up Selling to the segment increased due to SOA -Ongoing maintenance contracts - SOA sales from Channels	- Integration Time per engagement - Support Time per Engagement - Opportunities from Channels - Up selling in the tier - Analysts coverage	- Percent of Sales coming from the Business Units from the SOA Initiative	- Number of new customers

Table 67 - Tier 3 – The Small /Pilot Customer Scorecard

Financial Perspective (Shareholder Look)

This tier is focused around the customer that is new to the firm or a customer of the firm that does not have the scope and breadth of the upper tiers. It may also be a customer that would be suited to go up through the tiers but is not willing to commit the resources required for an enterprise implementation of SOA. The base metric as in the other tier is the revenue generated at that tier. These revenues must be broken down by product sales and services and then further broken down into a variety of factors identical to Tier 2.

Business Process (Operational Effectiveness)

Since the main difference between Tier 2 and Tier 3 is the scope and breadth of the SOA implementation the business processes will be similar. This tier does however come from less focused channels. This will cause the firm to keep an eye on the industry analysts as a benchmark to how well it is doing with its products and services.

Organizational Learning (Technology)

Tier 3 operational learning will be gauged by the sales across Business Units from the SOA Initiative. This will once again show how well the firm is learning the technology and applying it to this segment. This segment will provide the largest challenge in learning because it exposes the firm to a much wider array of technologies that the firm will have to write interfaces into. The lesson learned in the upper tiers will hopefully make the learning process more effective and efficient at this tier.

Customer Perspective (Customer Targeting)

Targeting this tier is focused on getting the word out to the masses about the firm's offerings. This can be gauged by the number of new customers of the firm on a quarterly basis to make the needed adjustments in targeting.

Tier 4 - Product Seeker

Balanced Scorecard Framework	Financial Perspective (Shareholder Look)	Business Process (Operational Effectiveness	Organizational Learning (Technology)	Customer Perspective (Customer Targeting)
Tier 5 - Product Seeker	- Revenue from the Tier - Revenue from VARS - revenue from non contact direct selling	- Marketing Costs - Opportunities from Channels - Analysts coverage	- Number of products that can be sold as stand alone and installed without high service contact from either the firm or and integrator.	- Number of Product Solution Seeker purchasing out of the box solutions

Table 68 - Tier 4 - Product Seeker Scorecard

Financial Perspective (Shareholder Look)

This is the tier that the firm focuses on the least. This is especially unattractive to SOA because of the critical piece of the agents needed to make SOA work. Still the firm should keep and eye on the revenue generated from the stand alone products that a customer can install by himself or herself. These sales will come from the VARS and box sale outlets as well as the firm's web site.

Business Process (Operational Effectiveness)

This tier has a huge downside if the firm is not operationally effective. Since the customer simply buys the box and installs it the products must work flawlessly. If the products do not perform, the firm will encounter huge support costs and bad coverage from the analysts.

Organizational Learning (Technology)

The high exposure described in the tier's operational effectiveness section drives the firm's learning as the number of products that can be sold as stand alone and installed without high service contact from either the firm or and integrator increases.

Customer Perspective (Customer Targeting)

Customer targeting at this tier will not be directed and be a spill over from the advertising and marketing efforts in the other tiers.

Appendices

The following table lists the necessary technical components of an end-to-end SOA solution. There are various components that are not listed here since they are not absolutely critical to the proper functioning of a SOA infrastructure. An example of such a component is the Enterprise Service Bus or ESB component.

End-to-End SOA Solution Component	Description
Application Platform	An Application platform provides the main container server or software to host the actual services. In this case, we can also refer to it as the Web Service platform since it will be used to host the actual web service.
XML Gateway	An XML gateway is a mediation system that focuses primarily on addressing SOA security by acting as a centralized point of entry in the demilitarized zone in the perimeter of the network. These entities normally support reliable messaging, content-based routing and message transformation.
Web Services Management	The Web Service Management system is focused on providing SOA management (security, reliable messaging, load balancing, versioning, logging etc.) and it may support message transformation where needed. It typically contains a set of agents or clients on the entity being managed, multiple views through a dashboard and an administration application where the latter two components are located on a central server.
Orchestration	The Orchestration system provides the ability to mix and match services to create new aggregated services in order to carry out a given business process end-to-end. Thus, they enable the assembly and coordination of services following more standards such as BPEL (Business Process Execution Language).
Registry	A Registry acts as a central directory listing of all services available in a SOA environment. It is able to provide information such as: location of all service endpoints for a service, a list of metadata or description data associated with the service and finally, a list of policies that apply to the service. One of the strongest registry standards used today is UDDI (Universal Description Discovery and Integration) and from OASIS.

End-to-End SOA Solution Component	Description
Enterprise Systems Management	ESM solutions are large scale applications available from traditional IT vendors that provide management - operations support and administration for a variety of IT infrastructure components such as application servers, databases, operating systems, storage and networks. Since SOA infrastructure includes all the above systems, it is considered part of the technology dependency list for a SOA environment.
Repository & Asset Management	Repository and Asset Management systems along with Registries (mentioned above) are used to manage information about various entities in a SOA environment including services, software and the physical hardware.
Policy Management	Policy Management systems provide the ability to manage end-to-end lifecycle of policies in a SOA environment in order to provide SOA governance. They are typically use in the following situations: 1. Manage and monitor service access privileges and 2. Provide ability to report and audit policy compliance
Contract Management	Contract Management systems provide the ability to manage the contract between the service consumer and the service provider in terms of various factors including SLA, service utilization, service availability etc.

Table 69 - List of technology components in an end-to-end SOA solution

References

- Hax, Arnoldo C. and Wilde, Dean L., "The Delta Model -- Toward a Unified Framework of Strategy" (September 2002). MIT Sloan Working Paper No. 4261-02.
- Hax, Arnoldo C. and Majluf, Nicolas S.,"The Strategy Concept and Process – A pragmatic approach" (January 1996).
- Service-Oriented Architecture (SOA) Infrastructure - Reference Architecture Technical Position by Anne Thomas Manes and Chris Haddad – Jan 2006 – Burton Group
- Understanding SOA with Web Services, NewComer, Eric and Lomow, Greg – April 2005, Addison-Wesley
- Understanding Service-Oriented Architecture, An Introductory Overview – Whitepaper from Versata
- ITIL and SOA: Can they Co-Exist? Vijay Raghavan, TowerStrides Inc. - March 2007
- IBM Service Oriented Architecture Glossary – March 2007
- Enterprise SOA – A leading website for SOA Architects – March 2007
- Loosely Coupled – Connecting with Web Services – March 2007
- Enterprise IT Management – The Architecture – CA White Paper – November 2005

Glossary of Terms

BPM – "Business Process Management is a discipline combining software capabilities and business expertise through people, systems, and information to accelerate time between improvements, facilitating business innovation."[v]

Common Object Request Broker Architecture – "The Common Object Request Broker Architecture (CORBA) is the standard for Object Request Broker (ORB) of the Object Management Group (OMG). CORBA provides a model for programming language independent communication between objects. It is based on CORBA IDL - an interface definition language that allows programming language independent interface definition. Due to its maturity and industry acceptance CORBA is the technical base for many contemporary SOA endeavors."[vi]

Enterprise Service Bus – "An Enterprise Service Bus (ESB) is a software bus that enables communication between the various components of an SOA. An ESB usually provides additional value by solving issues like security, fault-tolerance, distributed transactions, logging and auditing, unified access to different synchronous and asynchronous communication modes, scalability, etc. Most often large enterprises must support several software buses in parallel due to historical developments, major restructurings or mergers. It is therefore vital to plan for a service bus on a meta level that allows technical heterogeneity."[vi]

Governance – "This term refers to the programs and processes an organization puts in place to ensure that things are done right, where right means in accordance with best practices, architectural principles, federal regulations and other determining factors."[i]

HTTP - (HyperText Transfer Protocol) "The Web's communication standard. It defines the universal mechanism for exchanging application-level messages between Web devices. All web services run over this protocol."[vii]

J2EE – "Java Platform, Enterprise Edition or Java EE (formerly known as Java 2 Platform, Enterprise Edition or J2EE until the name was changed to Java EE in version 1.5), is a programming platform—part of the Java Platform—for developing and running distributed multitier architecture Java applications, based largely on modular software components running on an application server. The Java EE platform is defined by a *specification*. Similar to other Java Community Process specifications, Java EE is also considered informally to be a standard because providers must agree to certain conformance requirements in order to declare their products as *Java EE compliant*; albeit with no ISO or ECMA standard."[viii]

OMA-DM – "OMA DM is a protocol specified by Open Mobile Alliance (OMA) for Device Management (DM) purposes, by the Device Management Working Group and the Data Synchronization (DS) Working Group. The current specification is OMA DM is version 1.2, the latest modifications to this version released in April 2006."[ix]

SAML – Security Assertion Markup Language (SAML) is an XML standard for exchanging authentication and authorization data between security domains, that is, between an *identity provider* (a producer of assertions) and a *service provider* (a consumer of assertions). SAML is a product of the OASIS Security Services Technical Committee.[x]

SOAP - (Simple Object Access Protocol) "The standard for web services messages. Based on XML, SOAP defines an envelope format and various rules for describing its contents. It is seen as one of the three foundation standards of web services, it is the preferred protocol for exchanging web services, but by no means the only one." [vii]

SMI-S – (Storage Management Initiative – Specification), is a storage standard developed and maintained by the Storage Networking Industry Association (SNIA). It has also been ratified as ANSI standard ANSI INCITS 388-2004. SMI-S is based upon the Common Information Model and the Web-Based Enterprise Management standards defined by the Distributed Management Task Force.

UDDI- (Universal Description, Discovery and Integration protocol) "A directory model and standard for web services. UDDI is a specification for maintaining standardized directories of information about web services, recording their capabilities, location and requirements in a universally recognized format." [vii]

Web services – "Web services are software-powered resources or functional components whose capabilities can be accessed in an intranet or over the Internet. Standards-based web services use XML to interact with each other, which allows them to link up on demand using loose coupling."[vii]
"A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format (specifically WSDL). Other systems interact with the Web service in a manner prescribed by its description using SOAP messages, typically conveyed using HTTP with an XML serialization in conjunction with other Web-related standards."[iii]

WSDL - (Web Services Description Language) "The standard format for describing a web service. Expressed in XML, a WSDL definition describes how to access a web service and what operations it will perform. Usually pronounced "whizz-dul" (to rhyme with 'whistle'), WSDL is seen (with SOAP and UDDI) as one of the three foundation standards of web services."[vii]

WSDM – (Web Services Distributed Management) "WSDM, (pronounced *wisdom*) is a web service standard for managing and monitoring the status of other services."[xi]

WS-Management – "WS-Management is a specification of a SOAP-based protocol, based on Web Services, for the management of servers, devices, applications and more. The specification was

published in March, 2005 by a group of companies, including Microsoft, Intel, Dell, AMD and Sun Microsystems and others."[xii]

WS-CIM – "The Common Information Model (CIM) is conceptual information model for describing computing and business entities in internet, enterprise and service provider environments. It provides a consistent definition and structure of data, using object oriented techniques. The CIM includes expressions for common elements that must be clearly presented to management applications like object classes, properties, methods and associations to name a few. CIM uses a set of terminology specific to the model and the principles of object oriented programming. The standard language used to define elements of CIM is Managed Object Format."[xiii]

XML - (extensible Markup Language) "The data tagging language of web services. XML is not so much a language as a standardized set of rules for adding structure to any form of data using a system of markup tags. Anyone can create their own markup vocabulary (called an XML Schema), and XML ensures that the structure will be intelligible to anyone else who consults the XML Schema document. More importantly, referring to an XML Schema enables XML-aware software to automatically manipulate the data without needing advance knowledge of the structure".[vii]

---

[i] Service-Oriented Architecture (SOA) Infrastructure - Reference Architecture Technical Position by Anne Thomas Manes (amanes@burtongroup.com) and Chris Haddad (chaddad@burtongroup.com) – Jan 2006 – Burton Group (http://www.burtongroup.com)

[ii] Understanding SOA with Web Services, NewComer, Eric and Lomow, Greg – April 2005, Addison-Wesley

[iii] ITIL and SOA: Can they Co-Exist? Vijay Raghavan, TowerStrides Inc. - March 2007 http://www.**towerstrides**.com/docs/**ITIL SOA** WhitePaper TS.pdf

[iv] Jefferies & Company – 2007 – CA Inc. Report

[v] IBM Service Oriented Architecture Glossary – March 2007 – http://www-306.ibm.com/software/solutions/soa/glossary/index.html

[vi] Enterprise SOA – A leading website for SOA Architects – March 2007 – http://www.enterprise-soa.com/index.php?option=com_content&task=view&id=14&Itemid=44

[vii] Loosely Coupled – Connecting with Web Services – March 2007 - http://looselycoupled.com/glossary/

[viii] Wikipedia – March 2007- http://en.wikipedia.org/wiki/Java_Platform,_Enterprise_Edition

[ix] Wikipedia – March 2007- http://en.wikipedia.org/wiki/OMA_Device_Management

[x] Wikipedia – March 2007- http://en.wikipedia.org/wiki/SAML

[xi] Wikipedia – March 2007- http://en.wikipedia.org/wiki/WSDM

[xii] Wikipedia – March 2007- http://en.wikipedia.org/wiki/WS-Management

[xiii] Distributed Management Task Force – March 2007 - http://www.wbemsolutions.com/tutorials/DMTF/cim.html