Creating Agility through Context Driven Services™

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Introduction

In a time when technology and information are an integral part of our lives, we have reached a state of diminishing returns on technology investment. Information overload and complexity has led to technology, at times, becoming counterproductive. This whitepaper introduces an approach to delivering and consuming information technology called Context Driven Services. The goal of Context Driven Services is to unlock latent information value and allow greater business process and individual agility. Finally, this whitepaper discusses the existing technology concepts and first steps required to build Context Driven Services.

Promise versus Reality of Technology

Since the discovery of fire and the wheel, individuals, communities, and societies used technology to advance their causes. With the rise of the Industrial Revolution and into the 20th Century, business for the first time focused on exploiting technologies and automating processes. Eli Whitney's Cotton gin and Ford's assembly line are two of the more memorable achievements. In the last half of the 20th Century, this focus has been on the development of computing and the application of Information Technologies (IT).

By historical standards, the pace of IT innovation and adoption has been unprecedented. Initially, companies that used technology built many of their systems internally. This provided productivity, profitability and human comfort benefits. However, when we reached the 1990's, the rapid adoption of IT resulted in substantial challenges.

Unlike other parts of an organization, where investment was measured on quantitative/qualitative gain, 'the more the better' became the mantra of technology spend. This result was many failed technology projects with needs left unfulfilled. In addition, organizations were left with an overwhelming amount of data located in rigid and isolated systems.

The general promise of technology was to support and enhance the way people and companies work. The reality is that we changed how we naturally work and organize in order to fit into the strict confines of what technology will support. The result was difficulty responding to market and business changes.

While hindsight is 20/20, some of the IT-created complexity was unavoidable – the benefits achieved were partially a product of the tool sets available at the time. To solve these challenges, companies are more effectively aligning technology and business goals to ensure that business objectives drive technology investment - and not the other way around.

Improved alignment evolves the fundamental relationship between technology and the people that use it (the business and its stakeholders), achieving greater benefits, creating value and a truly agile business.

Organizational Challenges and the Need for Agile Processes

In addition to those produced by technology growth, the Information Age has created a myriad of new challenges for organizations. As firms operate in global markets, coordination costs and complexities increase while initiatives like outsourcing and joint ventures blur organizational boundaries. In addition, pressures to reduce cycle times and do more with less are on the

upswing. Finally, the need to meet government compliance and secure information and assets is an imperative.

Individuals, such as employees, partners, suppliers and customers are also challenged in the current environment. To accomplish their daily tasks and meet responsibilities, they are required to pull disconnected information from a variety of systems and resources.

Beyond locating information, individuals also must determine what information is important and manually tie it together individually or with others in a process. Adding to this complexity, the 'others' may be co-workers or outside the 'walls' of the organization.

Coordinating and controlling diverse relationships, flows of information and business processes across multiple boundaries in a secure manner becomes very complex and costly in this environment. As the competitive requirements of enhanced collaboration and innovation will increase, and so will the cost to deliver these requirements.

Organizational Challenges

1. *Information overload*
2. *Increased coordination costs*
3. *Do more with less*
4. *Reduced cycle times*
5. *Compliance and Security*

How can organizations relieve complexity, reduce cycle times, do more with less and comply with regulations while increasing agility? The answer is Context Driven Services.

What are Context Driven Services?

Services are the building blocks of business processes that, when combined; deliver value to customers and organizations. Services can be granular, such as issuing a purchase order, or integrated to constitute the complete lifecycle of a product purchase. Processes, in general, require a collection of individuals, information and resources to be successful. The ease in which we access and execute processes determines an organization's agility and ability to create value.

Merriam-Webster defines context as "the interrelated condition in which something exists or occurs." To derive context an understanding of the interrelated conditions that exist in a process is required. Why is context important as we look to improve the effectiveness of technology?

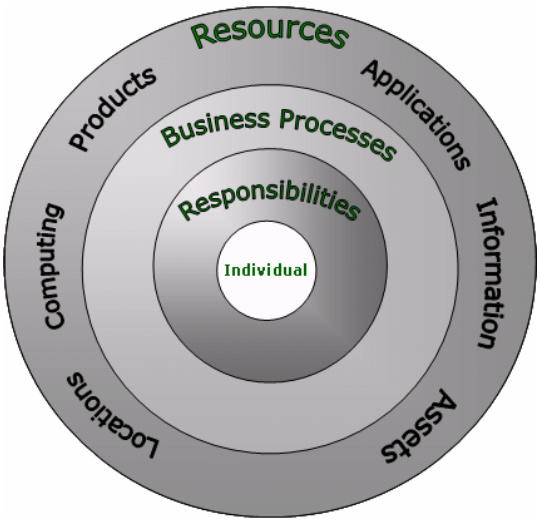

Figure 1. A model of the individual

As shown in Figure 1, individuals have responsibilities – the daily tasks that their role or roles require them to complete. How organizations act upon the aggregate of these responsibilities determines its effectiveness. Individuals undertake many activities as part of structured and unstructured business processes in order to meet these responsibilities. To complete these processes, individuals need timely, personalized and secure access to a wide variety of information and resources.

In the current state, information about individuals and the resources required to complete their responsibilities and processes are managed in a multitude of systems, each with its own protocol and language. Each system is able to manage the context for its specific focus but cannot share context across systems. To improve this situation, we must move the individual to the center of the process and deliver resources through Context Driven Services.

Context Driven Services mean that for any given situation, at a specific time or location (context), an individual or group of individuals is automatically given all the information and resources they need to be a participant in a pre-defined or ad-hoc process (service).

The goal of Context Driven Services is to enable agility across all parts of the business ecosystem (internal, external, customers and suppliers). This creates a means to convey large amounts of information, a filter to provide focus and priority of action, and a process to enable all users to collaborate effectively and efficiently. Context Driven Services leads to a 'natural' way of working that allows individuals to complete their responsibilities more efficiently and intuitively as opposed to technology causing the need to adjust to each situation.

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Examples of Context Driven Services

To develop a practical understanding of how Context Driven Services can benefit organizations and individuals, consider a familiar and consistent process - credit card transactions. The purchase is made, the account balance is checked and the transaction is approved or denied. However, in the area of fraud detection, credit card companies use information regarding transaction history and location and the cardholder to deny a purchase. For example, ten purchases from gas stations in a two-day period or a purchase from an obscure foreign location may cause denial or the company to contact the user. This is achieved through analyzing the context of each transaction based upon historical and relevant current information.

This example not only illustrates the use of context, but also the existing problem. The information used by the credit card company to make the determination of fraud is that which exists in the silo of the transaction data. The credit card company does not know the individual boarded a flight to Tahiti in the morning or that his wallet was stolen and reported to the police the previous day. This lack of information, or total context, results in the embarrassing rejection of transactions. The same applies to an individual in a corporate environment.

Take for example, Monique. She is an employee of US based ACME Corporation and is the Vice President of European Marketing. She lives and works in Paris and travels across the continent to fulfill her responsibilities. She must regularly access information from her PC at work, her mobile phone and from many remote locations. Monique also accesses multiple applications and data sources in many different ways to perform her daily tasks.

To improve effectiveness and agility, imagine if ACME better understood Monique as an individual. In the current state, information about Monique and the data she requires is locked into a variety of different locations. Based on the model of the individual, ACME could develop a

more holistic view of Monique. This includes her various responsibilities, business processes, resources she has access to and the preferences she has in receiving and providing information.

With additional context regarding her daily responsibilities and processes, Monique would not have to search for data in a static way or interact with processes on an application-by-application basis. Through a personalized portal, she is dynamically delivered corporate and European operational data. She can assess her status and act upon a variety of business processes, and all of this information is delivered in her native language, French. This will allow not only Monique to be more effective, but also the other individuals that collaborate with Monique. The result is increased effectiveness across all of ACME's relationships.

Greater context also allows ACME to deliver information and manage security more effectively. Data to a mobile phone is easily read because it is provided in a format that fits on the screen. Information accessed from an unknown PC in cyber café at a Greek resort is delivered with no business sensitive information. This occurs because ACME has context regarding the devices that is accessing information. In this case, context is derived from the type of device (mobile phone) and the level of trust of the device (cyber café).

Additionally, specific business events, e.g. end of year reporting, can lead to a prioritization of the information and processes Monique is presented. This filters out the clutter, allowing her to focus on the most important activities and utilize all the relevant information she needs – how she wants and when she wants.

How are Context Driven Services built?

While the concept of Context Driven Services is appealing, how can it become tangible? The technology driving Context Driven Services is realized today through the combination of two powerful approaches, Identity Management and Service Oriented Architectures. While both provide substantial individual business value, the intersection of the two provides the tools to take Context Driven Services from vision to reality.

Context Driven Services can be realized today through the combination of two powerful approaches, Identity Management and Service Oriented Architectures

Identity Management is the technical approach and tools to create the unified model of the individual central to Context Driven Services. A more holistic view of the identity or the various attributes that make up an individual (personal information, job information, location, assets they use and resources they have access to) provides the ability to understand and deliver context within business processes. Identity Management provides the ‘who and what’ within the interaction.

Like other pieces of related information, many companies manage identity information in disjointed areas and continue to build new silos of this information as they deploy more technology. This creates challenges in managing system security, user privacy and regulatory compliance. For users, this leads to countless user ids and passwords to access systems and difficulty receiving personalized and centralized information

Identity Management provides the ‘who and what’ within the interaction.

Beyond identity information, the additional challenge is managing the stovepipes of disconnected business information, applications and knowledge that exist across an organization. Context Driven Services enable removal of information stovepipes. This improves the control of information access and delivers automated business processes using integrated information. In the past, companies have used 'rip and replace,' 'band-aids,' and 'do-nothing' to

eliminate this problem.

The most costly and, not surprisingly, favorite of most technology providers, is to 'rip and replace' the existing technology. An example of 'rip and replace' is the removal of capable mission-critical applications with a monolithic enterprise system, such as ERP solutions. These solutions require altered business processes to fit the technology, are notorious for failure and are responsible, in part, for many of the current technology challenges.

The next option is to layer 'band-aid' solutions in place to deliver tactical solutions. Adding a web interface to an existing legacy system may make the user's life somewhat more pleasant but adds management complexity and does not expose the information across the organization. Finally, the third option is the 'do-nothing' alternative – live with the existing solution due to the alternatives not providing incremental value for the investment required.

Context Driven Services are based on a fourth option, 'rip and reuse'. This option consists of 'ripping' the information and its value from a variety of disjointed applications and data repositories and recombining it into improved and automated business processes. This is achieved through Service Oriented Architectures (SOA), the technical and process approach that allows organizations to couple, uncouple and recombine their internal and external information assets and resources quickly and easily.

In Context Driven Services, SOA provides the 'how' within the interaction

Current SOA technologies, like web services, provide the first realistic opportunity for organizations to create agile business models. Shared processes enable these models within and across organization using the 'rip and reuse' approach to release information and knowledge. While SOA translates services that exist within each application silo into a common language, current SOA deployments do not address the issue of representing how to organize these services into a meaningful context. By clearly mapping the relationships between applications and existing business processes, these recombined services can quickly deliver meaningful value while leveraging existing resources. In Context Driven Services, SOA provides the 'how' within the interaction.

Why do we need both SOA and Identity Management?

Using SOA to decouple information and processes within and across organizations will require an improved control and understanding of identity to provide context to many unrelated processes. Without identity information at a consistent, enterprise level, the idea of enterprise SOA will fail for the same reason technology has failed up to this point - complexity.

Complexity will arise from building and managing multiple and unrelated services and leads to higher management costs and/or suboptimal deployment of enterprise SOA. Therefore, an improved understanding and control of identity allows for richer context and more flexible business processes and services, simplifying and securing SOA through Context Driven Services.

By moving forward with Identity Management and Service Oriented Architectures, organizations can achieve new levels of agility. Business processes can be orchestrated by (re)organizing the glut of isolated information into manageable pieces based on context. Technology will finally be delivered in a manner that helps create business agility rather than creating additional complexity.

Getting Started

As with any change effort in an organization, Context Driven Services will require a level of planning, cooperation and coordination from across the organization and improved business and technical alignment. To achieve this, high-level sponsorship is required to show leadership, cross-organizational commitment and consensus to proceed.

Context Driven Services also require the move from an application mindset focused on workflow and data in silos to a process mindset utilizing context and information across the enterprise. While the final state will take some time to achieve, the interim benefits alone make Context Driven Services worthwhile.

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More specific to the path to Context Driven Services, organizations should consider activities that increase their likelihood of success:

- **Get control of existing identities**
  Identity is the cornerstone of Context Driven Services and is foundational for effective process automation. Identity Management also solves many tactical needs in the area of compliance, security and privacy, making it a prudent place to start. As mentioned previously, an enterprise approach to consolidation and synchronization of identity data within an organization is required. Without it, Context Driven Services, and at a minimum SOA, will be difficult and costly to achieve.

- **Deliver early Identity Management benefits**
  With all transformation efforts, early success is critical to build momentum. Improved control, integration and synchronization of identity information can provide short-term benefits in the area of simplified regulatory compliance, improved data security and privacy and the ability to reduce support costs and increase user productivity. These initial benefits create early business value and allow the program to become self-funding.

- **Identify existing best of breed technology components to create initial services**
  While deployed solutions begin to deliver benefits, enterprises can analyze existing technologies and processes to determine what should be reconfigured as services and begin to formulate an enterprise SOA. Organizations can create these simple services, with little impact on critical business processes, to build technical expertise and illustrate business benefit.

- **Implement initial solutions for high value business processes**
  With control over identities and experience in building services, deliver Context Driven Services that target critical business processes and provide substantial business benefit. At this stage, firms should analyze both internal processes and those that affect third parties. Beyond technology requirements, clear prioritization and alignment with the business stakeholders is critical. Changes to existing business processes and the technology estate will be required as will addressing the organizational implications of these changes.

Conclusion

Context Driven Services will be the driving force of technology meeting its promise and driving intra and inter-organizational agility and value. By moving the individual to the center and focusing on the interaction of individuals within processes, we can harness the value of latent information that exists within and across businesses. This will fundamentally change the way we work and how technology enables individuals and enterprises. It will provide the agility necessary to meet the challenges that exist in a world with blurred organizational boundaries and overabundant data.

Context Driven Services are built upon two existing frameworks, Identity Management and Service Oriented Architectures, allowing organizations to get started now. Identity Management delivers the right resources to the right person at the right time. Service Oriented Architectures allow for the dynamic combination of information in structured and unstructured processes. Context Driven Services, however, are much greater than the sum of the technology parts through reduced complexity and increased value of business processes provided by the combination.

The key to success will be proper business change management, and the time to start is now. Companies that begin to use the concepts and apply Context Driven Services are positioning themselves for success through improved agility and increased opportunity for growth and value creation.

About Primehaven Consulting Group

Primehaven Consulting Group is a management consultancy focused on alignment of business and technology strategy. We work hand-in-hand with clients to develop well-balanced and actionable plans that identify where you need to be and how to get there.

Studies have shown that 85% of all technology projects fail. Primehaven's balanced approach to technology planning helps companies avoid the pitfalls that lead to failure. We deliver rapid, initial planning projects that set an incremental and financially justified course towards the final business vision and objectives. For more information, visit www.primehaven.com or call +1 646.416.6849.