Enterprise Needs 2006 – 2010

A look at the needs that Enterprises want their IT Departments to address

VALUEMOMENTUM

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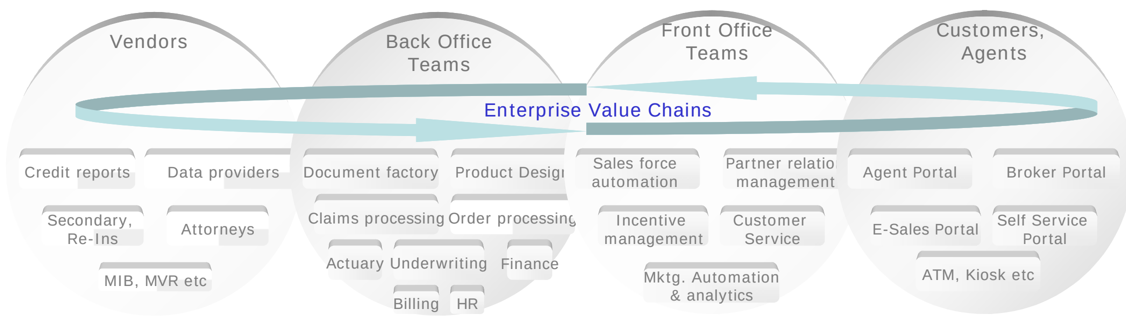
Chapter 1: Introduction

Every Participant in an Enterprise adds value during the delivery of products and services to Customers.

Enterprise Participants include:

- Front-office participants that interact with Customers & Agents
- Back-office participants that design products, support front-office teams and run operations
- Vendors who provide material, information and services to the Enterprise
- Customers and Partners are also participants in the overall process. They interact with Front-office participants and also, directly with the Enterprise via channels such as Internet Portals, ATMs, Kiosks etc.



The boxes within each circle represent typical activities carried out by each group of participants and the IT applications that support them

To successfully deliver the value provided by each participant, rapidly and in full to every Customer, Enterprises need to:

- Ensure that each participant performs his/her activities effectively and quickly
- Define efficient value chains (i.e. business processes or the flow of tasks, the sequence in which they need to be performed and the type of data to be shared) that coordinate and combine the work performed by various participants and deliver "value" (product or service) to each and every Customer.

Enterprises typically organize their Participants into Functional areas to facilitate easier management of work. Example: Front-office functions – Sales, Marketing, Customer service; Back-office functions – Underwriting, Finance etc. Within each Functional area, activities performed by the participants are organized into logical sequences ("Functional processes").

At the Enterprise level, there is one mega process (Enterprise Value Chain) that begins with a Customer and ends with the shareholder. This mega process is made up of Functional processes within each Function and also several processes that span across various Functional areas ("Cross-functional processes"). Example: When a Customer places an order, it is fulfilled by activities performed, in a pre-defined sequence, by several functional areas such as Sales, Underwriting, Contracts / Agreements department, Finance etc. The "Customer-order-fulfillment" process is a Cross-functional process.

Enterprises leverage IT applications to improve the efficiency and effectiveness of Enterprise Participants and establish Enterprise Value Chains (i.e. Functional as well as Cross-functional processes).

The key considerations for establishing Enterprise Value Chains are

- Effectiveness i.e. the capability or smartness of IT applications in supporting the activities of the participants and enhance the value that they are providing

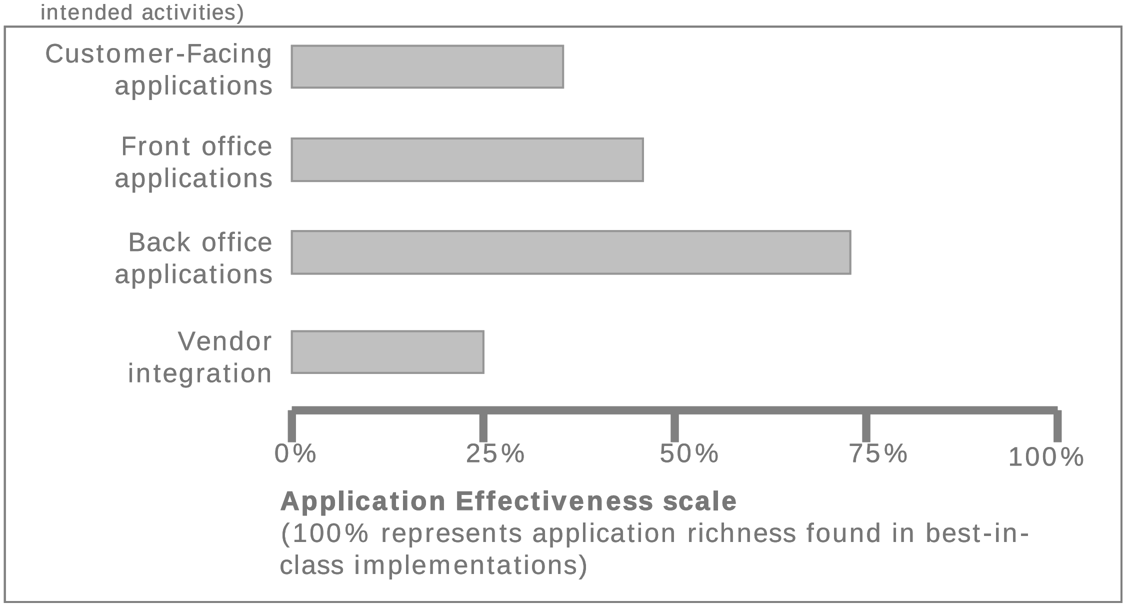
- Automation i.e. the ability to, in real-time or in near real-time, make available the value provided by a participant (output of his/her work such as data or decisions) to other participants and automatically trigger the next set of activities to be performed

- Agility i.e. the Enterprise's ability to adapt to changes in business climate by making rapid changes to
  - The value being provided by each participant and/or
  - The sequencing of activities and/or
  - Product / Service provided by the Enterprise

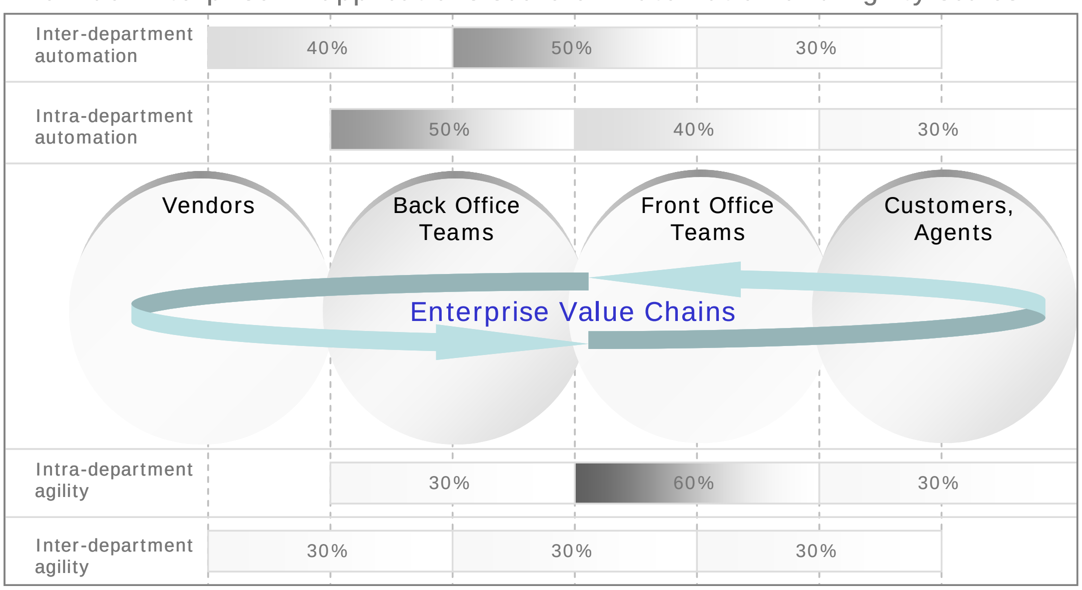
The following two figures provide an overview of how Enterprises (in Insurance and Lending industries) fare against each of these three considerations (Effectiveness, Automation and Agility).

How effective are enterprise applications?

(Effectiveness is the capability, smartness or functional richness of applications in supporting intended activities)



How do Enterprise IT applications score on Automation and Agility scales?



NOTES:

- Intra-department scales represent the levels of automation or agility within a given business layer of the Enterprise (e.g.: Back office, Front office, Customers / Agents)
- Inter-department scales represent the levels of automation or agility in between the business layers
- Percentages have been arrived at by considering best-in-class implementations in the industry to be at 100%

Observations, based on the above data:

- Effectiveness. Front-office applications and Customer-facing systems need to be more effective (functional) than they are today. Enterprises want to become more Customer-centric and believe that their existing Front-office and Customer-facing systems are not supporting this goal well enough.

- Intra-departmental (functional) Automation. While Enterprises seem to be satisfied with functionality present in the Back-office systems, they are not as satisfied with the level of Automation. To achieve higher levels of Automation, information should be current and consistent across all systems. Many Back-office systems still rely on job scheduling, batch processing and manual look-ups and entries thereby hindering higher levels of Automation. E.g., when a claim is received, automatically checking reserve availability and if it is not, sending a notification to the appropriate authority for allocating higher reserves for the claim, and automatically letting the Agent / Client know when they claims will be processed.

- Inter-departmental (cross-functional) Automation. As number of products Enterprises sell, number of channels through which they sell them and number of Customers they are servicing are increasing, so are the number of processes that support these activities. These new processes need to share data with existing processes and access activities performed by existing processes. Enterprises are finding that existing silo'd and inflexible processes hard-coded into applications are difficult to access and are becoming a bottleneck in achieving such Cross-functional process automation.

- Functional and Cross-functional process automation requires more than having current and consistent information across all systems. It also requires all systems to respond automatically, in real-time, and appropriately to the information they receive. For example: when a Customer order is received, automatically check inventory and let the Customer know when to expect delivery. If the Customer is an important Customer, even if inventory levels are low, prioritize his order and commit shipment in a week. If the Customer is low value Customer, commit shipment in a month.

  Such an ability to respond appropriately, based on who the Customer is or what the situation is, is required for true Functional and Cross-functional process automation. When processes have this capability they are referred to as Dynamic-processes. All processes need not be Dynamic. For example, "when a payment is not received by the payment date send a reminder letter" may be an Enterprise process that is applied uniformly to all Customers in all situations. Such a process is also referred to as a Standard-process. Even Standard-processes, to be automated, require that current and consistent information be available across all systems and should be able to automatically, and in real-time, perform a pre-defined set of activities. The diagram given below provides more insight into current process automation levels in Enterprises.

Process automation levels / Enterprise processes	Functional processes	Cross-functional processes
"Standard" automation level i.e. the ability to, in real-time, have current and consistent information across all processes & systems and automatically perform a pre-defined set of activities (for any Customer or any situation)	50%	35%
"Dynamic" automation level i.e. in addition to having current and consistent information, the ability to respond automatically and appropriately to it	40%	35%

Note: Process automation levels scale
(100% represents automation levels found in best-in-class Enterprise implementations)

- <u>Agility.</u> Enterprises have spent millions of dollars and several years improving and perfecting the functionality of their Back-office applications such as routine transaction processing, reliable storage of official corporate records and policy enforcement. But they find that still they need to spend 70% or more of their IT budgets and staff in upkeep of these applications as even making small changes to these applications requires enormous effort – mainly due to duplicate functionality, monolithic (non-modular) code and hard-coded processes. They would rather invest that money in more strategic new initiatives.

- <u>Re-use. Getting better ROI on investments already made.</u> When a new Line of business (LOB) is established that requires application functionality a part of which is similar to an existing application, Enterprises expect to be able to re-use what they have already spent a lot of effort developing. Unfortunately, they are unable to do so as many existing Enterprise applications have been developed as monolithic (non-modular) code, supporting a discreet business unit or a specific business function and designed for handling a carefully defined set of data.

Fortunately for Enterprises today, the advent of technologies such as Business Process Management (BPM), Business Rules Engines (BRE) and Web Services and emergence of the Service Oriented Architecture (SOA) approach make it possible to overcome the above challenges cost effectively, build Enterprise Value Chains, extend them to their Customers and Partners and achieve two seemingly-at-odd business goals i.e. faster time-to-revenue and reduced operating costs.

Chapter 2 of this document further examines how Enterprise applications have evolved over a period of time and provides a context for understanding the needs that Enterprises have today.

Rest of the chapters in this document outline various needs that Enterprise applications and IT infrastructure need to address in the next five years.

Chapter 2: Evolution of Enterprise applications and IT infrastructure

Before Enterprises embark on the task of building Enterprise Value Chains, they need to critically examine if their existing IT applications and infrastructure are at a stage where they can effectively participate in the Enterprise Value Chain needed for rapidly delivering value, in full, to every Customer.

In the previous chapter, the key challenges that Enterprises are facing in establishing Enterprise Value Chains have been discussed.

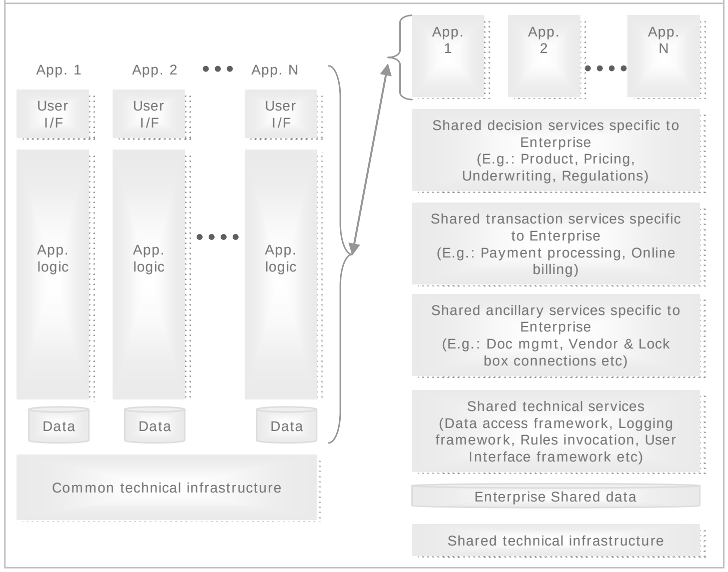
To understand why Enterprises are faced with these challenges, it is important to examine how Enterprise IT applications and infrastructure have evolved over a period of time.

The 1970s and 80s were a period in which Enterprises were focused on computerizing their Back-office activities. The key goals were ensuring reliable and fast transaction processing, reliable storage of customer contract and financial records, reliable storage of employee and vendor contract records, enforcement of policy etc. Mainframe systems offered the best performance and reliability and naturally, they became the de-facto choice for most Enterprises.

Applications were built, largely on the Mainframe, as and when business needed them. As business expanded, largely organically, more applications were added to meet the growing business needs. When a new type of product was introduced, a new set of applications were developed to handle the related needs. When a new line of business (LOB) was added, a new set of applications were introduced to operate that business line. Such a silo-based approach to building applications was not just restricted to product lines or LOBs but also in addressing new channels, new regions, new segments etc.

Eventually, Enterprises ended up owning and operating several discreet applications, each with its own dedicated resources. As business needs grew, each silo'd application became bigger and more complex.

The efficiency that can be gained by moving away from silo'd way of developing applications



This, in-turn, resulted in the deployment of more IT staff to each silo'd application (with specialized knowledge of the silo'd application) for maintaining and evolving it. The end result is that Enterprises are spending today 70% or more of their IT dollars in the upkeep of these silo'd applications. Additionally, when business embarks on an inorganic growth strategy, or wants to quickly adjust to an unexpected change in the market conditions or wants to introduce a new product line, existing applications become a bottleneck.

If Applications are built not as silo'd systems but as systems that share many common services, then Enterprises can:

- Reduce their application maintenance expenditure
- Allocate IT staff more optimally
- Deliver applications for new business needs in shorter time

Unfortunately, the reality is that Enterprises have built, and own, many silo'd applications today. Hence, it is important to examine all aspects of existing Enterprise applications and IT infrastructure before discussing optimal approaches to building and managing Enterprise applications.

While 1970s and 80s were a period in which Back-office automation was addressed, the 1990s became the period of Front-office automation. As number of Customers grew and competition intensified, Enterprises started to look for improving the productivity and effectiveness of employees who interact with Customers (sales teams, partners, customer service representatives, marketing etc.). Enterprises started realizing that their success is based on how well they manage interactions with Customers.

Some of the key goals aimed in this period were:

- Enabling each sales person to handle more Customers
- Increasing the amount of time Agents spend in selling rather than problem solving, paperwork, validations etc
- Reducing order entry errors and thereby improving customer satisfaction as well as saving time and paperwork
- Reducing call center operational costs and improving number of calls that can be handled by each CSR
- Reduce the time it takes to develop telemarketing scripts

For accomplishing the above goals, it was not just enough to have Front-office application functionality but also have Front-office and Back-office applications integrated so as to enable information access, policy enforcement, avoid data double entry and achieve cross-functional automation.

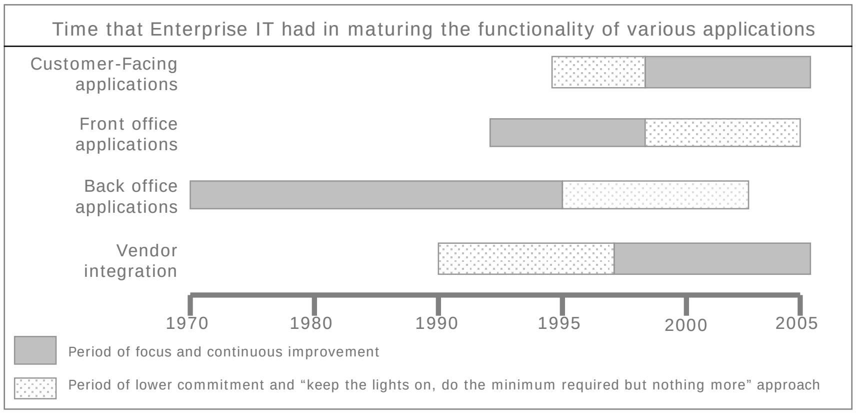
Integration needs slowly extended past the Back-office and started including needs such as data exchange with vendors and third-party service providers.

For meeting these Front-office functional and integration needs, IT departments started introducing CRM software (built in-house or purchased) into Enterprises. However, as in the past, the focus was on near term issues impacting business rather than taking a long term approach in systematically evolving Enterprise IT applications.

The result was that, like with Back-office applications, IT departments adopted a silo'd approach in introducing Front-office applications meeting the needs of discreet business units or product lines. The overall IT application infrastructure became more complex with several "spaghetti" connections for integrating Front-office and Back-office applications.

Front-office functionality was introduced but CRM applications (built in-house or purchased), at-least till late 1990s, did not deliver on their promise. Much of the functionality that business desired for Front-office automation was not available in these systems.

The functionality was either very difficult to develop or most times CRM implementations focused on Back-office integration issues rather than on core Front-office functionality.



More importantly, Front-office needs were studied for a much shorter period of time compared to 20 to 25 years of understanding, implementing and refining of Back-office needs. Front-office applications were not given enough time to mature as Enterprises, driven by the advent of Internet and e-commerce, shifted their focus to Customer-facing applications

Customer-facing applications are not new to Enterprises. Banks had introduced ATM's in the 1970s. Casino slot machines and drive through windows in fast food chains were there before then. So were automated tele-service systems. Since late 1990s Airlines have been introducing e-ticketing machines in airports and grocery stores have been introducing touch-screen kiosks.

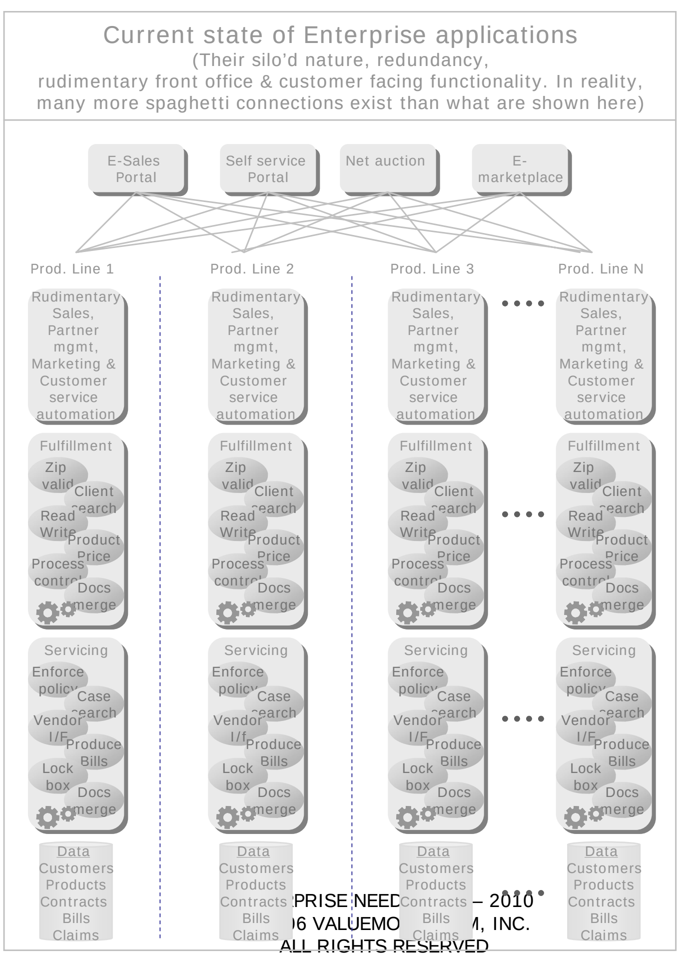
Internet driven Customer-facing systems such as E-sales portals, self-service portals, Net auctions and email sales have become very critical to Enterprises since late 1990s. Efforts to introduce these applications had been taken up with extreme urgency and pushed the front office functionality off Enterprises' priority list in the late 1990s and early 2000s.

While Front-office applications were leveraged by people in the Enterprise serving Customers, Customer facing applications (especially the ones that were based on Internet) provided totally automated but rich interaction between Enterprises and Customers. These applications presented a huge windfall to Enterprises in terms of cost reduction (as they reduced human labor required in selling or servicing), reduced time to market, reduced channel commission and making the “e-store” available at-home and round the clock to Customers.

Developing Internet based e-commerce, self-service and other Customer-facing applications required Enterprises to learn new technology tools and platforms. Moreover, such applications had to access other applications and data in the Enterprise. Again, development of such applications was taken up with such urgency that Enterprises often introduced them in a silo’d manner and enabled access to other applications and data using “spaghetti” connections.

Like Front-office applications, Customer-facing applications too had only a five to six year period for maturing and hence need to further evolve – especially in terms of unification, interactivity and “end-to-end” transaction fulfillment capability.

The following figure depicts the current state of enterprise applications and IT infrastructure.



Enterprise applications, even with all their shortcomings, have been delivering business results. While Enterprise IT departments could have taken a more systematic approach to evolving Enterprise applications, they did a superb job considering that they had to live with several challenges such as:

- Business pressure to address what is immediately required
- Budget constraints that only funded efforts required to fulfill immediate business needs but not the layout of a foundation to evolve applications in a systematic fashion
- Shortcomings of technology available in the marketplace

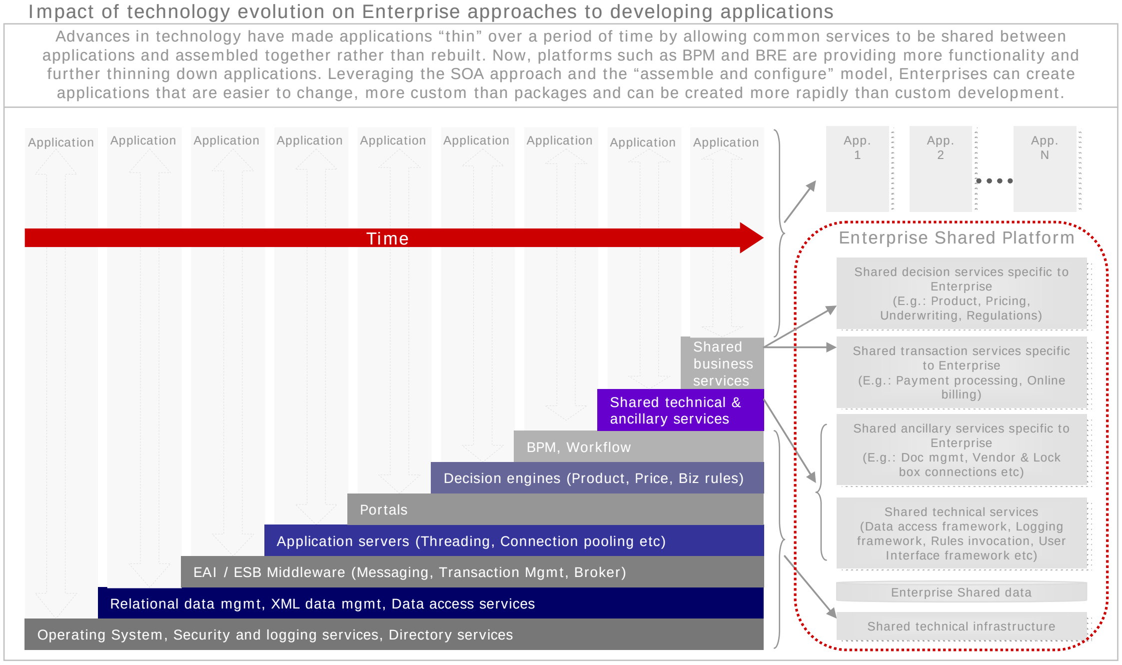
While a few Enterprises are early adopters of technology, most Enterprises prefer to work with proven technologies and apply them in areas that they have a track record of being well suited for. Considering this, it is not surprising to see that technology and Enterprise applications have evolved hand-in-hand. The diagram given below illustrates this.

Synchronous evolution of Enterprise Applications and Technology available in the marketplace

Enterprise applications that leverage the technology and its strengths ---→	Back Office applications	Front Office applications	Customer facing applications	Loosely coupled systems. Process automation. Greater reuse, flexibility. Reduced costs, complexity.
Key strengths of the technology and things that it enabled ----→	• Transaction reliability • Reliable data storage & access • Centralized processing allowed policy enforcement • Ability to perform large transactions rapidly	• Predictable response time • Features, processing & data available on user desktops • User friendly UI • Computing power spread Enterprise wide	• Features, data & processing accessible by external world • User friendly UI • Fully automated interaction between Customer (or Agent) & Enterprise became feasible	• SOA is not just a new technology. It is a new way of delivering & maintaining business functionality • Leveraging related technologies, Enterprises can deliver applications and make changes rapidly • Functionality reusability • User definable processes and decision logic
Key technologies that gained Enterprises' acceptance for being "reliable enough to adopt" ----→	MAINFRAME DBMS, RDBMS	CLIENT SERVER MIDDLEWARE	WEB APP-SERVERS PORTALS	SOA WebServices BPM BRE
Period --→	1970s, 80s	Early 1990s	Late 1990s Early 2000s	Present

As it is apparent that technology evolution and Enterprise application evolution are synchronous, it is beneficial to examine how technology has evolved over a period of time and what impact that evolution has on application development approaches. The diagram given below provides this perspective.

Impact of technology evolution on Enterprise approaches to developing applications



This chapter has provided a perspective of how Enterprise applications have evolved over a period of time and the business needs that were catalysts for that evolution. It also highlighted the technology evolution that occurred hand-in-hand with the application evolution. This perspective will provide a context for the subsequent Chapters which provide an understanding of the needs that Enterprises have today.

Enterprise needs that are currently being addressed by IT departments

Enterprise needs are mainly shaped by immediate business imperatives, competitive industry landscape, economic climate and existing level of automation and applications already in the Enterprise.

Advances in technology, most often, support efforts in realizing Enterprise needs but sometimes can also be a catalyst (as in the case of Internet and E-business). As technology matures, increasingly it is becoming a key parameter in deciding how business responds to a new opportunity, threat, competition or change in economic climate.

Each Industry, Business line and Enterprise is unique in terms of its size, the regulatory environment it faces, existing level of automation, immediate business priorities and competitive pressures. Hence, the exact needs that each Enterprise or a Line of Business has and the approach that it will take to fulfill those needs will also be unique.

Keeping this in consideration, Business Managers and Technology executives should use the needs collated from various experiences and discussed in the next few chapters as an insight to aid them in understanding their own specific needs.

Also, the order in which the needs have been discussed does not signify prioritization or importance. In fact, Enterprises may choose to address the needs listed in the following chapters one at a time, in part, all at once or in any other combination and in any order that best suits their purpose, current technology environment, business imperatives and execution capability. IT Mangers will find that, many a time the technology they deploy and efforts they put in for fulfilling a particular need may be leveraged in fulfilling other needs too.

This white paper is part of a series of papers addressing the topic “Enterprise Needs – 2006-2010. To view other papers, please visit www.valuemomentum.com/WhitePapers/index.htm

About ValueMomentum

ValueMomentum is a global professional services firm assisting Insurance Carriers and Lending Firms by leveraging industry process experience with strong technology expertise, to achieve full potential through the implementation of Agile, Real-Time & Smart Value Chains.

Headquartered in South Plainfield, NJ, ValueMomentum has world class delivery centers in South Plainfield, NJ and Hyderabad, India. There are additional Client Services and Business Development offices in Chicago, IL, Sunnyvale, CA and Hyderabad, India.

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