# The software development process of ecommerce systems

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# THE SOFTWARE DEVELOPMENT PROCESS OF ECOMMERCE SYSTEMS

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*Abstract*
*Today, in the new economy, while the possibilities for software are seemingly limitless, so is the growing demand. The problem is that speed and quality have typically been opposing forces in software development, and they still are. In the past, businesses could sacrifice software quality to respect the deadlines, or compromise on software features to meet time-to-market deadlines. In the new Internet economy, it have no choice: the software developers* **must produce higher quality software.**

*For this reason in the paper,* we *described the key points of software development process in the new economy, trends and major characteristics, the evolution of this process. In particular, the ecommerce system development methodologies which resolve the problems of e-business applications.*

***Keyword****s: ecommerce systems, software development process,* CMS-Content Management Systems, *new economy, new business*

### The major characteristics of new business

*"Software is the world's most critical industry and will be for years to come. Yet most companies are spectacularly unprepared to create the software that will redefine how they interact with customers or that will help deliver their goods and services in new ways. "* – affirm *Mike Devlin,* Chief Executive Officer, IBM and *Paul Levy*, CEO, Rational [2].

Technology still drives the new economy, the e-economy.  The difference is, the stakeholders in the new economy have remembered how important profitability is. The Internet - with the software and communications technologies that drive it - is changing everything.

But, software is everywhere, from the cars we drive to military equipment (today, 80% of a fighter jet's capability is performed by software, compared to 6% in 1960); to the cell phones that are allowing us more freedom and mobility. As software is becoming more present in more places, so too is the Internet impacting every business in this e-business world.  become  For businesses the world over, the Internet continues to drive more change and more opportunity.

Today, in the new economy, to be competitive, every business must embrace the technologies of its customers, its supply chain, and its partners. Software is increasingly used as the basis of this connection.
It has made so many surveys in this direction and the conclusions are:
- Software will continue to become increasingly complex.
- The new economy requires software that can be continuously updated.
- There are unlimited possibilities for software's growth.

Grady Booch has often said, "*We cannot reduce complexity in how we build software. The best we can do is manage it."* Today, the software developers are pressured to deliver more complex applications that require more mastery of more computing concepts and techniques than ever before. In building for the Web, the trend is toward even more concurrent, more distributed, and more connected applications.

In the past, most new software systems were developed by an internal IT organization, and the predominant value of software was in reducing the cost of doing business. Today, the new demands are

competition, revenue and ever-faster cycles of development and upgrade. Indeed, the Internet has revolutionized the ability to both include the user during development and deploy software products transparently to a broad user base.

This need to support continuously evolving systems has driven today's software development processes away from the traditional sequence of waterfall development activities toward a highly iterative model. In the past, many software domains drew a distinct line between development and maintenance, but future software projects (legacy system upgrades, new applications, or some combination of the two) will not differentiate much between development and maintenance.

Iterative development and the Internet are also driving software engineering toward a more homogeneous software management approach. This includes process frameworks, advanced requirements and design notations, and Web-based architectural patterns.

### *Evolution of information system development methodologies, in particular ecommerce systems*

First of all, the term *information system* is often used. A special type of information systems is *web information systems.* The development of complex, data-intensive web applications is becoming simpler due to the usage of content management systems [3]. Conventional information systems development methods as well as web application development methods do not cover the specific needs of a method for web content management implementations.

A large number of information system development methods are available (fig.1). Many specialists considered that web applications can be seen as a subtype of information systems. Using data-intensive Web applications raised new problems concerning consistency, navigation, data duplication, content audit and control, tracking of content and mapping the website workflows on the business processes [7].

The solution for these problems was found in content management. *A content management system* (CMS) makes it possible to create, archive, search, control and publish information from within a flexible and integrated environment [1]. A special type of content management systems are CMS-based Web applications, which are defined as Web applications for the management and control of information [5].

In academic and professional literature no specific methods on this subject exist. Currently, established information system and Web application development methods are being used, but these methods are not able to cover specific content management aspects.
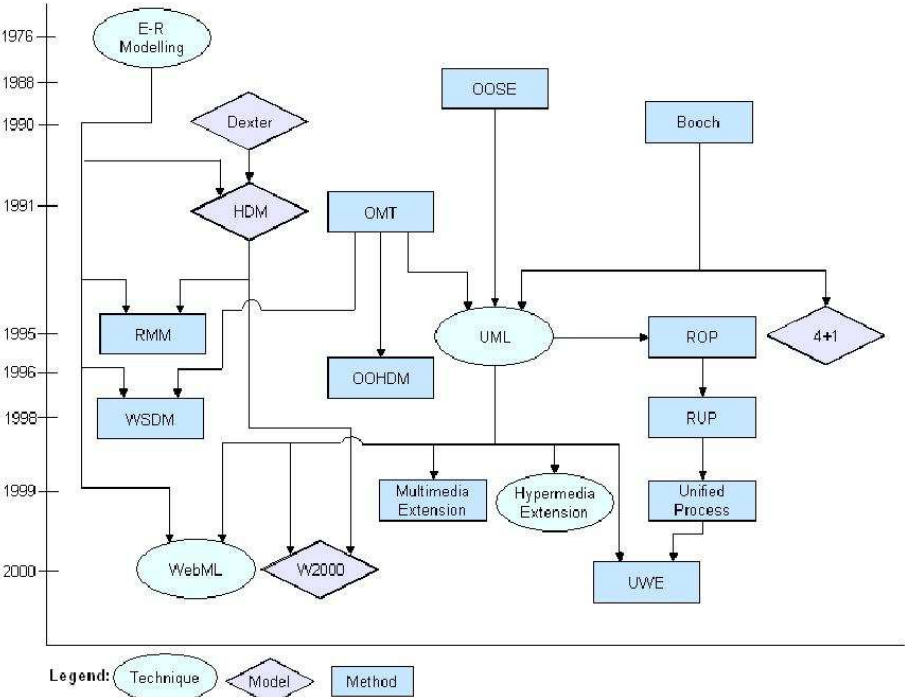


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### The software development process of ecommerce systems

IT professionals, web designers, engineers, IT managers or executives, everyone must understand how to apply software engineering concepts for ecommerce systems, for better integrate their software with the needs of their business. IT professionals need to establish a methodology that resolve all the problems of e-business applications. Those software developers who understand the concepts of analysis, architecture and design, will have the success in developing ecommerce systems.

It is important to understand the ecommerce systems that a new and unique form of software development which must not be build with the same methodologies necessary to build any information system. The development of successful ecommerce systems depends on powerful analysis, design and implementation.

The software developers must be able to understand the customer needs, provide user interface requirements, establish security, network architecture, ensure integration with legacy systems. Standard methodologies tend to depend on the existence of homogeneous conditions in business, but this fact didn't exist for ecommerce systems.

Because it doesn't speak about the information system analysis or design without the approach of software life cycle; for ecommerce systems, IT specialists must use a life cycle witch integrates creative design, advertising, marketing concepts (distinctive characteristics of the Web) and software engineering requirements. This life cycle must combine the traditional software life cycle with the spiral life cycle. The spiral approach develops each component of the total project independent, as such should have its own life cycle, each component can be middleware component, objects or reusable applications. The traditional approach is used for analysis, design or implementation.
In this way, it takes the best from both cycles.

### Conclusions

Over the past two decades, the software industry has moved unrelentingly toward new methods for managing the ever-increasing complexity of software projects.

Two important remarks must mentioned:
- **Software will be the key differentiator for every business in the new economy**. It connects businesses to customers, suppliers, and partners. It empowers everyday devices.
- **Reduce complexity and improve processes at all levels of software engineering**.

The full integration of electronic communications and the business sector happened. Indeed, it is happening now as ever more modular ecommerce systems are being developed and deployed into the marketplace.

It is important to understand the ecommerce systems that a new and unique form of software development which must not be build with the same methodologies necessary to build any information system. The development of successful ecommerce systems depends on powerful analysis, design and implementation.

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