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Technology Futures: Architecting for the New Economy
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Based on a presentation by Nicholas Noecker, IBM Solutions

The new economy presents both challenges and opportunities for business. While the "old" economy was market-based, the "new" economy is information-based. The shifting economic conditions have implications for businesses that require corresponding changes in the way that IT designs the architectures of tomorrow. Mr. Nicholas Noecker, an IBM Solutions Executive, discussed the shift at the September 2001 ISRC meeting and presented ways in which IT should deal with the new wave of economic conditions.

Introduction and Overview

The new economy is here to stay. While critics argue about the underlying structure of the economy, one thing is certain: the changes made by the Internet are strategic and fundamental. In the connected world of today, organizations can form and dissolve relationships quickly. However, now that we are here, what is next? Where does IT move from here to support the firm of the future?

The "Old" versus the "New"

According to Nicholas Noecker, the old economy was a market-based economy, while the new economy is information-based. The differences that exist between the new and old reflect fundamental differences in customer activity, key drivers, and business opportunities. In the market-based economy, customers "took" at a low price and industrial goods were the key drivers in the economy. Companies seeking to find new opportunities searched for ways to serve as intermediates between suppliers and the customers. In this role, IT served to find efficient ways to deliver goods, to plan and manage the supply chain, and to help create efficiencies within the organization.

In the information economy, customers actively "search" for a best buy, and information goods are the key drivers in the economy. Instead of seeking opportunities as intermediaries, businesses are looking to serve as a provisioner, bundling and selling information from the customer to the supplier. In this role, IT serves to gather and store vast amounts of information and then electronically deliver that information to a supplier willing to pay the price demanded. The focus is on the relationships between the suppliers, the customers, and the firm, with IT being crucial to the ultimate success of the delivery of the good. The table below presents a comparison of the two economies.

	Market Economy	**Information Economy**
Customer Activity	Customers "take" at a low price	Customers "search" for best buy
Key Drivers	Industrial goods	Information goods
Business Opportunities	Serve as an intermediate between supplier and customer	Serve as a provisioner of data between supplier and customer

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The "New" Economy: Relationship Management

Given a shift toward an information-based economy, customers become the input factor, providing the data to the companies seeking to provide the data to suppliers. Customers and suppliers interact with the firm using channels. Firms, then, manage the channels and the strategic activities within their firms to develop activities for each of the channels. Complex relationship management becomes the basis for the new economy, with the business and IT architecture needing to reflect the changing structure. The figure below depicts the new economic relationships.

| Customers | ⟷ | Channels | ⟷ | Strategic Activities | | Suppliers |
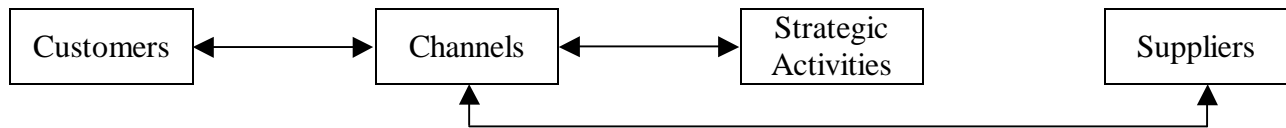
The "New" Economy: IT Responds

Given the new relationships that emerge, IT architecture must address a number of questions:
(1) How can IT structure the exchanges necessary between all of the parties involved?
(2) Beyond the basic exchange, how can IT create an exchange where the behavior of all parties can be monitored?
(3) How can IT revolutionize the nature of the relationship? (For example, how can IT help to enable the structuring of pricing based upon the type of relationship?)
(4) How can IT help to manage the channel management and supplier relationships?

According to Nicholas Noecker, IT needs to respond to these four questions by enabling the firm to build large-scale, but intimate relationships. By collecting information from customers and providing that information to suppliers, firms of tomorrow will represent the new, information economy, serving the role of information provisioners. With the demands placed upon it, IBM believes two changes are needed:

(1) IT architecture needs to become more advanced and specialized. The design for the architecture of tomorrow is to use edge of network servers to translate the data and to direct the data to the appropriate servers. Further, new architectures will used highly specialized servers, including directory, personalization, commerce, and relationship servers. While being highly integrated and robust, this solution will enable firms to collect, store, and process the amount of data necessary for intimate relationships on a large scale.

(2) IT outsourcing needs to move toward service architecture. Processes that are similar for all firms, such as signing up new customers, need to become available at a service level. Thus, firms will continue to move away from non-value added services, instead choosing to outsource these standard procedures. This move toward a service-based outsourcing agreement enables firms to further focus on core competencies.

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The "New" Economy: An Example

Nicholas Noecker also presented an example of the changing economy and subsequent response in IT architecture, in the form of IBM's Internet-Scale Data Acquisition and Control Systems (iDACS). This system seeks to revolutionize the meter reading industry. In the past, meter reading was accomplished through a manual data collection and entry system. A "meter reader" would visit the house of an individual, record the reading, return to headquarters, and manually enter the results. The old system offered firms limited ability to react to change in real time. Today, meter reading occurs through partial automation. Now, "meter readers" drive through residential areas, collecting data from infrared systems mounted on cars or hand-held devices. However, the "meter reader" still needs to return to headquarters for the data to be synchronized from the devices to the system. The system of tomorrow will be a fully automated data collection and entry system, where the data will instantaneously be collected from the house of the consumer remotely. The result is that there will no longer be a disconnection between business planning and operations and firms will be able to react in real time to changing situations.

With the vision of tomorrow comes the realization that IT architecture has not been created to enable such a transformation. If a new software schema can be created, a provisioner can step in to become a broker, collecting information from the consumer and selling the data to the supplier. This reflects the move from a market-based to information-based economy.

From an IT perspective, architecture needs to be designed that can collect the data from the house of the individual (thus changing architecture) and then standardized so that the architecture can be sold to firms willing to act as provisioners (thus changing the outsourcing paradigm). IBM thus believes that this market represents an emerging business opportunity and reflects the changing economy and IT architecture.

Summary

The "new" economy that is emerging is relationship-based, information driven, and increasingly complex. With the demands for a robust system, IT needs to respond with architectures that are intimate with suppliers and customers, yet robust enough to handle the vast amounts of information that are required for firms to be successful. Some solutions include new outsourcing arrangements, such as outsourcing services, and enterprise architecture re-engineering, using new types of servers, such as edge of network, directory, personalization, commerce, and relationship. By employing these techniques and enabling firms to be provisioners of data, IT will be prepared to take advantage of the strategic and fundamental changes made by the Internet.