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Harnessing Technology for Mutual Funds

By

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1. Harnessing Technology for Mutual Funds

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This paper examines the role of technology in shaping mutual funds industry. While the mutual funds industry is still in the process of assimilating technological advances that can increase efficiency, reduce cost and enhance information flow, the pace of development has shown remarkable acceleration in the past few years. New tools such as personal computers, desktop workstations, networking capabilities, satellite communications, internet, more powerful computer processing and increasingly sophisticated hardware and software have been developed and made commercially viable.. These recent advances in information and communications technology are rendering the entire financial services industry, including mutual funds, more efficient, cost effective and transparent. Moreover, the benefits of recent technological developments have not been limited to just one or two players, but extend to the entire industry. Harnessing the future impact of continuing technological advance is therefore far-reaching. The paper provides a snapshot of the technological advances that have taken place in the mutual fund industry and the challenges that lies ahead.

Introduction

Technology has seen a phenomenal growth in financial services industry in the last few years. A number of financial institutions and intermediaries have started taking concrete initiatives towards offering comprehensive online services even before the legal framework for online business transaction is in place. Technological breakthrough has enabled huge sums of money to flow through the world's financial markets every day, at a very low cost. These cost savings and efficiencies are, in turn, filtering down and benefiting both consumers and businesses around the world.

E-finance, as a result of technological development, has started affecting overall volume of transactions that take place in the financial and capital markets. Indeed, innovations in technology are unleashing the full potential of e-finance. Internet, as an offshoot of spectacular growth in technology has already become an ubiquitous medium for transacting business, sharing information, and

communicating with people all over the world. It has provided consumers and investors more power and more choices at a lower cost.

Mutual fund industry, like several other industries, is a beneficiary of growth in technology in the last few years, particularly in India. The writing on the wall is quite clear as the traditional style of distributing and servicing mutual fund unitholders is being revisited by many players in the industry.

A New Breed of Investor

As a result of impressive growth in technology, a new breed of investors - more informed and more inquisitive is emerging in our country. Never before Indian investors had so much available to them at the click of a button or a phone call. The Internet in all possibility will emerge to be a powerful tool for people to manage their money and get financial news. As a result, there has been a boom in online brokerage firms and financial news web sites. According to Jupiter Communications of the USA, the number of American households trading stocks online in the USA will jump fivefold-from 4 million in 1998 to more than 20 million by 2003. This means that more than 40 percent of all U.S. households will own stocks in some form using an online trading account by 2003. Currently, 17 percent of all stock trades are executed online in the USA, up from almost none five years ago.

Today, many individual investors make extensive use of Internet for investment research and their number is increasing day by day. By visiting various web sites, they can now see fund's portfolio, scan corporate results and research reports, get stock quotes, and engage in e-trading. The new era for technological revolution has brought with it longer trading hours, lower costs, greater transparency and better pricing information.

Further, emergence of online brokerage firms has given many investors ease of use and lower commissions than charged by traditional brokerage houses. As

traditional ways of doing business have been transformed by technology, many high networth individuals are opting for online investing. ICICI Direct is probably the first service in India to provide complete end-to-end integration for seamless electronic trading on the exchanges. Far from being passive spectators, these new investors are proactive, are directly involved in making their own investment decisions, managing their assets, and researching investments. Many financial web sites offer personal portfolio-tracking features, which enable customers to instantaneously see the performance of their holdings online.

Retail investors are using financial web sites to help them with their investment planning. Various financial Web sites also enable them to figure out how much needs to be saved as well as what type of investment vehicles would make the most economic sense for investment planning for different age groups of investors.

Technology in the mutual fund industry

Effective and on-going communications with unit-holders heightens importance for the mutual fund industry. Mutual funds call themselves to be attractive savings vehicles for investors of moderate means, often investing for the future such as retirement plans, higher education, etc. Therefore, the need to communicate and service millions of investors, who frequently purchase units on an on-going basis (for instance systematic investment plans), makes it vital for the mutual fund industry to invest in technology. Technology has made the explosive growth of the industry manageable.

The relentless pace of technological change and user needs are all set to change the way we use, or even understand innovations, such as the internet. Technology through e-finance and internet can reduce distribution and transaction costs, speed up document processing online, provide instantaneous access to information and enable switch over in investment decisions, handle

investor's grievances, etc. This, in turn can dramatically improve efficiency and decrease the costs of back office paraphernalia. Further, by providing detailed information about schemes, the Internet lets mutual funds engage in "one-to-one marketing," allowing them to tailor the online experience to fit unique individual needs.

Investors can now look for many pieces of vital information on the web. Procedures that used to take weeks-and that required seemingly endless personal visits, dozens of phone calls, messy paperwork, and huge amount of manpower - can now be handled in minutes or hours, electronically. For investors, technology and the Internet is fast becoming part of daily life.

While many funds are now using electronic media to "reinvent" themselves to be more accessible to the savvy investors, they are also using this media to transform themselves into more sophisticated and technologically advance entities.

The mutual fund industry thus uses electronic media:

- to deliver both required disclosure materials, such as prospectuses, and additional sales literature, to potential investors more quickly, and in a more economical manner;
- to educate their investors about the myriad choices facing them in today's market, by providing on-line tools to assist investors in developing asset allocation models
- to respond to unitholders inquiries, by using on-line communication and providing fast access to account information;
- to develop new types of fund services, expanding the choices available to investors; and

- to permit unitholders to purchase and exercise switch over option across eligible schemes on-line.

Areas to be affected by changing technologies

Three areas of the mutual fund industry are expected to see the maximum change in the near future as a result of technological improvement. They are:

1. Distribution of mutual fund products
2. Information on schemes, and
3. Customer care

This in turn will allow efficient management of the industry that can provide a wider array of products and services to consumers.

Further, this development will also clear the way for mutual funds, banks, stock brokerage firms, insurance companies to move increasingly into each other's territory, thereby forcing each player to become more efficient, more creative, and more customer-focused than ever before.

Online investing in mutual funds: Poised to Take Off

Online investments in the primary market, mutual funds and other financial assets is likely to grow manifold in the next few years. Such services will make financial tasks like checking balances, paying application amount, and transferring funds cheap and hassle-free. Large number of issuers of equity, debt and mutual funds have already started offering their products online.

The structure of the mutual fund industry explains to some extent why such a large number of funds are using new technologies to provide information to

investors. Investment advisers, RTAs, broker-dealers and other members of the industry typically create a web site that is shared by all of the funds in the group. A single web site may therefore provide information about several different funds, allowing investors to reach large numbers of competing products.

For example, the web site of Computer Age Management Services Limited (CAMS) provides services to unitholders of participating mutual fund clients. By browsing CAMS's website, one can get a link to participating mutual fund home pages (such as Alliance Capital Mutual Fund, ANZ Grindlays Mutual Fund, etc) for prospectus, performance history, application form and a statement of investment philosophy. One may even subscribe to them for receiving information pertaining to NAVs, current balances and portfolio valuation periodically through e mails.

Technology and the impact on distribution of mutual fund products

The area that is most likely to have the biggest impact as result of changing technology is distribution. Even though average investment in technology in this sector is yet not very high, distribution of mutual fund products and services is likely to be immensely affected by technology in a big way. Financial products such as mutual funds are, therefore, expected to be differently in the next few years. More funds will sell and service their products through the Internet, ATMs, kiosks, etc. While several mutual funds have already started offering application forms on the net itself, many Registrar and Transfer Agents (RTAs) too have started investing heavily in technology. This activity, combined with the decline in the number of agents, will lead to significant changes in distribution. While this is going to require massive adjustments on the part of the industry, the advantages of e-distribution surely augurs well for the industry.

Along with change comes challenge. While the current rapidly changing technological change in the industry is challenging, it has also created tremendous opportunities for growth.

Figuring out the best way to distribute products and services is the challenge mentioned most often by mutual fund industry. Handling the distribution change to electronic commerce will therefore be a huge challenge. The three biggest challenges facing the insurance industry are distribution, distribution and distribution. Funds will now experiment with several methods of delivery. No one is likely to rely any longer on a single form of distribution. Funds are now selling their products through agents, the Internet, and through third parties. Each fund has to be able to provide products and services across distribution lines to stay competitive in the overall marketplace. Fully utilizing the Internet for sales and distribution will now be the sole concern of many funds in our country.

Integrating distribution network

To expand into a broader range of financial services, several intermediaries such as Stock Holding Corporation of India (SHCIL) have made significant commitments in technology for marketing of financial products such as bonds, equities and mutual funds. This has changed the distribution landscape of financial products and services significantly.

The number one challenge for the mutual fund industry is gaining the widespread distribution network in India like banks. As banks and mutual fund products traditionally compete with each other, does the mutual funds industry possess the skill set to be competitive in the areas where they have not traditionally been players?"

Formulating and executing appropriate strategies that reflect the changing industry landscape in addition to the widespread application of electronic commerce is likely to be major challenges for the mutual fund industry. Finding opportunities to quickly exploit unique strengths in new ways in a new competitive environment will therefore be the real challenge.

Changing Profile of mutual fund Investors

The vast amount of information accessible to retail investors, and various tools available to enable such investors to sort, search and save data quickly, have dramatically altered the profile of the "typical" mutual fund investor. Until recently, the only information that most investors received about mutual funds consisted of the fund's prospectus, and the advice given to them by brokers or other financial advisers. Today, an investor with a computer and a modem may instantly receive not only many funds' prospectuses, but also performance data, commentary about funds and reams of investment advice. Technology has encouraged many individuals to research and track their portfolios using only a home computer. As a result of this revolution in information availability, many investors believe they no longer need the assistance of a broker or other professional to do their financial planning for them. In the past, the industry has been slower to respond, but now one will have to provide what the consumer wants, and the way he wants it more quickly than what was done in the past.

The next five years will therefore see a rate of change in the mutual fund industry that will be faster than in any comparable period of the industry. Technology will continue to enable dramatic improvements in the way we do business, from back office operations to the way we interact with our investors. Technology will further change the course of the industry. Everybody now is looking at what technological changes such as internet, touch screen Kiosks, datamarting, data-warehousing, CRM solution, ATMs, etc can do for us 'tomorrow'. At the same time, customers will become even more knowledgeable, more selective, and have higher expectations.

Advantages of harnessing technology in mutual funds industry

a. Lower overall costs for mutual fund entities

The extensive use of the Internet and related technologies by funds and investors may not only facilitate informed investing; it also may lead to lower overall costs. Because an investor can compare the fees and other features of one fund to another on-line, some speculate that extensive use of the Internet and related technologies by funds and investors will result in increased competition among funds, which may place downward pressure on mutual fund fees and fees for other financial services.

b. Improvement in performance

An ever-present challenge for mutual funds is to ensure growth in the value of assets it manages. This task has become increasingly difficult as several uncertainties keep triggering crisis in the market either due to high volatility, fluctuating interest rates or other factors. Further, new entrants of industry are already offering increased competition by way of one-stop shopping facility.

As competition with other financial products increases, developing the right products and posting growth in NAV are the two most critical challenges of mutual fund outfits. To be a respectable and efficient fund, one needs to devise the product properly while providing superior customer service at reduced costs. The Internet, along with the use of other technologies, could provide the solution.

The challenge of developing new products is further intensified with increased competition from other funds and competitive products from banks. One significant challenge is the necessity to respond more rapidly to

the demands by customers for new and innovative products. Banks are able to do so, and therefore funds have to bring products to market more rapidly than in the past to be able to meet the demands of today's dynamic and competitive marketplace.

c. **Articulating the Need on the net**

One challenge the industry faces relates to articulating the value the mutual funds add to the investor's portfolio. In meeting this challenge, campaigns on the internet can build awareness and promote a good image of mutual funds.

d. **Communications with unitholders and Others**

One of the most interesting developments technology has brought about is in the area of communication with unitholders and agent. Competitive pressures, high cost of postal charges and the time it takes to send letters to unitholders and agent has forced many funds, including UTI (which has over 45 million accounts and over 80,000 agents) to consider using the Internet and other modes to communicate with the unitholders and others.

e. **Vision For The Future**

In the not-too-distant future, we will not need paper applications or to use the mail or even the fax. We can have the financial advisor make the sale and execute a paperless transaction via the Internet. The interesting thing about electronic commerce is many important fundamentals will not change. The role of intelligence, creativity, judgment, character, and just plain grit—all of them will remain very vital.

Ultimately, internet has the potential to result in an enormous shift in the way funds deliver service. Investors will eventually be able to manage the whole

fabric of their relationship with mutual fund outfits through their computer or television screen. This means providing a great deal of interactive communication—an e-commerce environment where clients, at any hour of the day or night, can get information NAV, or make address changes, etc. In effect, they will manage their portfolios or relationship through their PC.

f. Development of New Products and Services

Many new products and services in the mutual fund industry would not be feasible without advances in computer technologies. As the number and sophistication of investors in mutual funds have increased, investors' desires for different types of funds and pricing structures have increased as well. Mutual funds in the USA are increasingly using computer technologies to develop new products and services to satisfy those demands. Few of such products are described below :

i. Creation of "Quant" Funds

Quantitative, or "quant," funds use computer models to screen stocks based on predetermined criteria such as earnings momentum, price/earnings ratios, and relative price. With these inputs, the computer generates most, and in some instances all, of the investment decisions. While these funds have not yet achieved widespread popularity, some believe that the introduction of quant funds by Fidelity Investments and Schwab signals their future growth. One fund's model consists of a three-step process that evaluates 1,300 stocks based on 40 different valuation factors, Wall Street analyst recommendations and insider selling patterns. Following this evaluation, the computer optimizes the fund's portfolio to obtain risk/reward potential and to produce industry diversification similar to that of the S&P 500. The final portfolio consists of 50 to 100 stocks.

ii. Master-Feeder Funds

Competition for mutual funds assets has been intense, and has led to innovations in the structures used to aggregate assets under management in collective investment pools. Technology has enabled funds to develop and manage those new structures in a cost-efficient manner. One recently developed structure in the investment management industry is the master-feeder (or hub-and-spoke) arrangement.

In a master-feeder arrangement, one or more feeder funds (or spokes), each of which is tailored for and sold to a particular category of investors, invests its assets in a single master fund (or hub). Funds management takes place at the master fund level, while distribution and other services occur at the feeder level. A master-feeder structure allows a fund group to sell feeder funds through several distribution channels to different categories of investors, to spread fixed expenses among a greater amount of assets and provides the possibility of greater diversification due to the larger asset base.

The holdings and cash flows of feeder funds must be reconciled daily with those of the master fund, and computer technology facilitates these tasks. Fund accounting software and other data processing systems have been specifically designed for these types of funds.

iii. Mirror Funds

Technology has enabled foreign money managers to offer U.S. investors the opportunity to invest in mutual funds that are substantially similar to those sold outside the U.S., but that are registered under, and have the protection of US securities laws. These funds are commonly referred to as "mirror funds." Due to legal limits placed on the ability of any non-U.S. fund (a fund formed under a

jurisdiction other than the United States) to sell its units publicly in the United States, the manager of a non-U.S. fund may seek to register in the United States as an investment adviser and establish a mirror fund registered in the United States that invests in the same securities as a fund in the adviser's home country. This U.S. "mirror fund" may then be offered to investors in USA. Computer software has been developed that is designed to facilitate the management and operation of different mirror portfolios by a single investment adviser.

iv. Hourly Pricing

Technology has allowed mutual funds in the USA to provide enhanced services to fund investors that would not have been feasible before the advent of advanced computer systems. Most funds calculate their net asset values once daily, and all purchases and redemptions each day are effected at those net asset values. Advanced computer and communications technologies have enabled some funds to offer a series of funds that are priced and stand ready to sell or redeem their shares on an hourly (rather than daily) basis during regular business hours.

Information Provided Through Third Parties

Many third parties also have recognized the importance of mutual funds in today's economy, and have developed information services that are tailored specifically for mutual fund investors. These third parties also have made extensive use of electronic media to reach investors, adding to the amount of information readily and inexpensively available.

Some funds in the USA forego establishing their own web sites and rely on the web sites of third parties. The web sites of third parties allow investors to receive large amounts of information about many funds in one location. Several on-line directories also list funds and have hyperlinks to fund web sites. For example, the

NETworth web site provides information regarding thousands of mutual funds. Within NETworth's "Mutual Fund Market Manager," an investor may obtain a report containing general information about a fund, as well as information about the fund's risk, performance, and management and a graph showing the fund's net asset value. A link to the fund's home page also may be available. A user identification and password are required in order to obtain certain information, including a description of a fund published by a third party. An investor also may use NETworth to obtain rankings of funds meeting the investor's particular investment objective and risk tolerance, as well as to search for funds that meet particular investment criteria. Fund commentary and book reviews also are available on the NETworth site.

An important service offered by NETworth assists funds in ensuring that their prospectus delivery obligations are fulfilled. A fund, like any other company offering its securities to the public, must provide a prospective investor with a copy of the fund's prospectus before the fund may lawfully accept an investment in the fund by the investor. A NETworth user who wishes to obtain a fund prospectus must enter the user's name and password, available free of charge by registering on-line with NETworth. This registration system allows NETworth, on behalf of the fund, to obtain from the user a consent to receive the prospectus electronically. At the same time, the investor is provided with the opportunity to request that fund prospectuses be sent on paper. NETworth also can report to each mutual fund the names of consenting investors who viewed the prospectus on-line. This report may be used to evidence delivery of the fund's prospectus, so that the fund can then permit the investor to download an application and invest in the fund.

Brill Editorial Services operates a web site entitled Mutual Funds Interactive that includes hyperlinks to many funds' web sites, as well as mutual fund news from Bloomberg L.P. and newsgroups. The Mutual Fund Education Alliance's web site contains general educational information about investing in mutual funds, and links to numerous funds' web sites. The Mutual Fund Cafe web site provides

articles and information about the fund industry, including monthly reviews of industry trends and weekly analysis and commentary.

Succeeding On the Net

The real feat will be to leverage technology while preserving the best human aspects of business. Successful funds will find ways to empower their sales people with tools that enable them to use their knowledge, experience and judgment to help investors. Many foreign mutual funds, such as Zurich Kemper uses e-commerce for sales, distribution, and customer communication. Trustmark has focused on using the Internet to provide superior customer service thereby achieving great improvements especially in dealing with our group clients. Allstate Life uses e-commerce to facilitate the exchange of information with consumers and agents while continuing to emphasize the role of agents and broker-dealers as the key players in the transaction process. Security Benefit Life has seen positive results from their integrated Internet and systems strategy. They use the Internet to service end customers and help sales representatives and organizations better manage their customer base

Integrated Internet strategy is more customer-centric than product-centric. This strategy better targets individual customers. It helps in combining distribution sales information to distribution networks utilizing customer information.

Challenges Ahead

a. Bigger Not Necessarily Better

We have already seen continued consolidation and the formation of larger conglomerates in the financial services industry. However the mid-sized, niche players still offer bright outlook in the industry. The philosophy of "bigger is better" may not be relevant in the future as the moment a fund crosses the threshold of 'ample size' and can afford the technology, then doubling, tripling, and quadrupling may not give a competitive edge.

b. Convergence: will be the major change factor

In the new world of integrated financial services we have already started seeing several examples of Indian institutions such as HDFC, ICICI, etc. launching their own banks and mutual fund outfits. All of them are now initiating a foray into insurance sector as well. The increased pace of competition among banks and mutual funds in India is quite evident for every one.

It is quite therefore quite clear that there will be increased convergence as mutual funds extend their bank type products, banks extend their insurance type offerings and insurance companies extend their bank-type offerings. The time is not far away perhaps when mutual funds, banks and insurance companies merge with each other and convergence will be the major change factor for the future. All these are likely to lead to more reliance on technology.

c. Value Propositions

As performance by the mutual funds takes center stage, funds will look strongly at the whole area of value propositions. Are different schemes really adding value? If the answer is no, changes will come about more quickly than in the past. Showing better performance will increase NAV and will add value at every step along the way.

d. Operating Efficiently

Funds have to constantly work to make operations as efficient as possible by employing highly skilled employees and providing them with the appropriate technology to provide low cost superior customer service. They need to be continually open to utilizing new technology to make continual improvements. Operating efficiencies hold the key to profitability for many funds. The industry must continue to improve its operating efficiency so that one can provide excellent value products to their unitholders.

Reducing operating costs, increasing volumes, process improvements etc. will play a leading role in reducing costs. Also, better use of technology, data, and information flow will help reduce costs.

Risks of on-line financial transactions

Several challenges exist for businesses and investors operating in the world of e-finance. But as e-commerce becomes more and more inseparable from the brick-and-mortar type, those concerns will fade. Technology is evolving so quickly that ever-more-sophisticated security solutions are being devised. A number of software companies have sprouted up to furnish security solutions, and experts say that the financial services industry has been at the forefront of implementing such systems.

People by and large are reluctant to reveal personal financial information online, and therefore success of e-marketing depends on ensuring confidentiality. For example, investors have to furnish PAN, salaries, e-mail addresses, assets and liabilities, and the names of employers, among other information, to qualify for being approached by the funds. While many take a very surreptitious approach to information about investors, via the use of "cookies," such a strategy is unlikely to be tenable in the long run. Consumers worry about how personal information- especially data gathered by financial services industry- will be used. Could they be haunted by tax men based on financial information provided by them. Will they be hounded by sales calls from marketers who obtain their name and critical financial data? Concerns such as these must be put to rest if consumers are to have the trust and confidence to do business in the new world of e-commerce.

Technology & regulation

Mutual funds and other types of investment companies have recognized and capitalized upon the tremendous opportunities provided by technology. Funds world over sell their units to a rapidly growing market, and are anxious to use new systems to locate and communicate with potential investors. Many funds in India too have successfully adapted electronic media into their operations and communications strategies. Technology has permitted more funds to reach out to more investors faster, and more cost-efficiently, than ever before. The government & SEBI now has to respond to the promise of technology by introducing the laws to accommodate new ideas that they are consistent with investor protection and are friendly to the industry as well.

Thus SEBI and the government have to continue to be responsive to new technology driven ideas. While some of the recent growth in the industry may be attributable to the increasing use of technology by mutual funds and investors, not all mutual fund outfits and investors have embraced technology to the same extent. However, the market will ultimately prove the worth of technology. While many mutual funds could realize significant cost savings by delivering all of their required disclosure documents electronically, many investors are not able or willing to receive them in this format. Thus, a system of pure electronic communication seems some distance away.

Regulations of mutual funds Offerings

While technology has created opportunities and benefits for investment companies, their investors, and regulators, it also has created challenges. As technology continues to develop at a rapid pace, the regulatory framework must evolve as well. SEBI now faces challenges to facilitate and respond to developments in technology. Some challenges are related to technology itself,

such as the need for secure means of communicating private information or transmitting monies on-line, and ensuring the ability of an investor to redeem units in a fund. Others arise from the nature of the Internet itself -- which provides unique opportunities for international communication. It will be a challenge to ensure that this generation of investors, with access to more information than their parents had in a lifetime, has disclosure documents that are helpful and that will guide them in making informed investment decisions.

a. Disclosure

More and more, individual investors are entrusting their life savings and retirement needs to mutual funds. These investors need easily comprehensible information to guide them in making critical investment decisions. Mutual fund investors crave for information. Information about investing in mutual funds is very plentiful in today's society, but investors need knowledge to evaluate their investment options.

Electronic media hold the promise of making communications between funds and their investors easier and more efficient. SEBI should therefore ensure that funds should build on that promise by making the information that is delivered to investors more helpful and useful.

b. Security of Information and Transactions

The fund industry must continue to seek out those security devices that protect the integrity of on-line transactions against the risk of theft of investors' payments and proceeds. Mutual funds also must ensure that their systems allow them to redeem an investor's units in time upon their request. The vast numbers of individuals and institutional investors buying, selling and exchanging fund shares make attention to security concerns imperative. SEBI has to actively engage itself in discussions with industry representatives

regarding security issues, and monitor that systems designed to ensure the integrity of electronic transactions are adequate.

c. Expanding Distribution Channels

Fund supermarkets have created a new and popular forum for mutual fund investors. Some commentators attribute the primary forces behind the growth of this new distribution channel to the millions of computer-savvy investors going on-line to use the resources of these rapidly expanding networks. As indicated earlier, fund supermarkets offer investors many advantages over investing directly with individual fund groups. They offer a larger selection of funds, consolidated account and tax statements, the ability to switch among funds without incurring transaction fees, distributions "swept" into a single money management account, on-line and software tools for planning, research and analysis, convenient trading on the Internet at a discount and financial planning advice.

As supermarkets have developed, SEBI has to provide guidance for governing the timing of purchase or redemption requests. This guidance should allow investors that use supermarkets to make purchase and redemption requests on an equal basis with those investors that engage in the same transactions directly with a fund.

Roadblocks

If these trends continue, mutual fund industry will approach a state of theoretical perfection, thanks to technological development made possible by the Internet and other innovations.

Unfortunately, plenty of factors could yet spoil the party in the mutual fund industry. Some of they are:

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- **Recession.** There is a direct connection between investment in technology and economic growth. Indeed, unless financial activity and savings increases as a proportion of GDP, countries struggle to develop their economies. Correspondingly, if the world economy entered a recession, causing markets to tumble, the technological revolution in the industry could temporarily grind to a halt.
 - **Government.** Any effort by the government / SEBI to clamp down on both financial and technological innovation is also likely to jeopardize the. Financial scandals, such as the sale of inappropriate products to consumers, might lead to tougher regulation and stifle markets.
 - **Privacy and security.** A global finance industry will depend on large amounts of data about consumers. If these data are abused, there might be insufficient trust to achieve a mass market. Problems with security on the Internet is a particular danger.

Conclusion:

Which way will the future go? Thanks to technology, particularly the Internet, finance has the potential to reach both a new level of sophistication and breadth of participation.

Mutual fund industry in India is yet to make significant commitments in technology which are exclusively industry-oriented. Formulating and executing appropriate strategies that reflect the changing industry landscape in addition to the widespread application of electronic commerce are major challenges. Finding opportunities to quickly exploit unique strengths in new ways in a new competitive environment will be a parallel challenge for the mutual fund industry.

However, in the near future, while online service functions in the mutual fund industry will expand quickly, online sales functions will not. In the near term, there will be limited success of the Internet as a direct sales tool, and more use as an information source for unit holders and prospective investors.

Investors in India still feel that financial products such as mutual funds are too complicated to be sold over the Internet. Most expect that the role of the financial advisor will grow as they are needed to impart knowledge to investors. Many still believe that the Internet is not going to replace the professional advice-giver. The Internet will allow us to provide better service to customers—both end customers and those who sell our products. The Internet will offer greater ability to provide the financial advisor with more knowledge to impart to prospective customers.

However, the use of technology, including e-commerce, will continue to grow very, very rapidly in the next ten years, probably faster than it's grown in the last decade. Electronic commerce is already revolutionizing the way the world does business, and that change will only accelerate as semiconductor chips become more functional and more affordable, as communications bandwidth increases, and as consumers become more comfortable with and more dependent upon technology. E-commerce will have a huge impact; changing the way we think, act and work. It will revolutionize the mutual funds industry in the same way that it will revolutionize all industries.

The enabling capabilities of the Internet will be significant in servicing customers and supporting agents. It will be the primary factor in enabling us to render better job with these client segments.

Appendix – I

E Commerce: Survey findings of Nasscom

Time is money. And probably the quickest way to save time and create business, thereby generating income, is through e-commerce. The success of e-commerce has led to its implementation in many important business sectors. The ability to conduct critical back office transactions in a fast, secure and reliable way has become a major part of the manufacturing, retail and transportation industries. It is rapidly being adopted in other vertical market sectors.

According to Nasscom, total volume of E-Commerce transactions in India were estimated at Rs. 450 crore in 1999-2000. Out of this volume, about Rs. 50 crore were contributed by retail internet or Business-to-Consumer transactions, and about Rs. 400 crore were contributed by Business-to-Business transactions. And the same is growing at a rapid pace day after day. Further. As per Nasscom, there were more than 1.04 million internet subscribers in the country as on 30th June 2000. The actual number of users who have ready access to internet in India are more than 3.7 million. The internet subscribers are expected to increase to 1.6 million by March 2001. This figure is expected to increase to 4 million Internet subscribers (10 million users) by March 2002, and 8 million Internet subscribers (18 million users) by March 2003.

Companies in India are discovering that E-Commerce is where the business is, but getting there requires careful planning. Many sellers have rushed onto web only to find that they don't know how to make the service pay for itself. Undoubtedly, differentiating a Web site from competition or attracting customers by offering added services, and at the same time managing the systems end of an E-business do call for special skills. And, as online transactions grow more complex, these challenges will only mount. Moreover, we are not only referring to Net based E-Commerce, which is just a proportion of complete E-Commerce picture. But, the whole gamut of Business-to-Business E-Commerce including

Customer Relationship Management, Supply Chain Management, Business Intelligence through Data Warehousing and even Virtual Enterprises

Key findings of NASSCOM's Internet Survey

Date	Internet Connections (in million)	Users (in million)
August 15,1995	0.002	0.01
March 31,1996	0.050	0.25
March 31,1997	0.090	0.45
March 31,1998	0.140	0.70
March 31,1999	0.280	1.40
March 31, 2000	0.770	2.80
June 30, 2000	1.040	3.70

INDIA - GROWTH OF INTERNET (Projections)

Date	Internet Connections (in million)	Users (in million)
March 31, 2001	1.6	05.0
March 31, 2002	4.0	10.0
March 31, 2003	8.0	18.0
December 31, 2003	11.0	23.0

Some of the highlights of the domestic e-commerce scenario based on the findings of Nasscom's survey include the following:

- As of 31 March 2000, there was a PC base of 4.3 million PCs. Out of these, there were more than 3 million machines, which had Pentium chips, and above (i.e. machines which could be effectively used for Internet).
- More than 81% of stand alone PCs sold during financial year 1999-2000 were driven by the need to access the Internet
- 91% of India's corporate Web sites are located overseas.

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- Internet access continues to be most widespread amongst the 18-24 year age group. However, all age groups have seen vast increases in access over the last 18 months. A significant development is that almost 11% of people over the age of 40 now access the Internet.
 - Males continue to outnumber females in accessing the Internet at 77% compared to 23%. This has however increased from the ratio of 82:18 in June, 1999.
 - The Internet and e-commerce industry employs approximately 82,000 people. These include Web developers, Web designers, system analysts, ISP infrastructure providers, marketing staff, e-software professionals etc. It is projected that by March 2003, the Internet and e-commerce industry would employ over 300,000 people.
 - Countries such as Sweden, US, Australia and Singapore report around 40% homes with Internet connections. India has about 4 lakh households connected to the Internet.
 - The emergence of competitively priced mobile phone technology with the capability to address the Internet is an evolutionary development. India currently has a mobile population of 2.3 million (by March 2000)
 - Internet users on an average are estimated to be accessing the Internet for 6 hours a week.
 - The profile of Internet users in India is dominated by the professional/corporate segment, which accounts for around 43 percent of Internet usage. Inching close behind is the student community represented by school and college goers. This segment contributes close to 38 per cent of Internet surfers
 - Over half (59.2%) use the Internet as an information resource, 11.3% use it as an educational tool and just under 8.2% use it for entertainment.
 - When asked what are the most frequently used service online was, 73.4% answered email, 77% answered search engines and 23% said they use it for downloading / uploading software.

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- Of the total Internet users around 20 per cent own credit cards and around 14 per cent own mobile phones

The user side: E-commerce means business!

Some of the highlights of the domestic e-commerce scenario based on the findings of Nasscom's survey include the following:

- Among user organizations, more than 90 percent expressed keen awareness about the increasing adoption of e-commerce and its potential benefits.
- More than 55 percent of corporate respondents said that e-commerce transactions were integral to their corporate plans. Of these nearly 85 percent were industries which did not have direct or frequent contact with end consumption.
- About 23 percent of top 500 companies in India already have started some form of e-commerce in place. These have been facilitated through the upgradation of existing IT systems or fresh installations configured for E-commerce transactions.
- The most commonly found business practice is to establish extranets or EDI (Business-to-Business) infrastructure for an initial or learning period. This is subsequently upgraded to Internet based access mechanisms.
- More than 90 percent of the respondent cited perceived efficiency in Supply Chain Management as a motive for Business-to-Business E-commerce and enhanced customer service (Customer Relationship Management) for Business-to-Consumer transactions. The other cited benefits included moving towards Just-in-Time management.

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- About 48 percent of the respondents said that given the right framework and cost effective infrastructure, they would like to move towards adopting E-commerce at the earliest
 - SME's are increasingly seeing the benefits arising from e-commerce as expanded geographical coverage giving them a larger potential market into which they can sell their products and services.
 - Some of the key industries that have high potential for early adoption of E-commerce are financial (stock exchanges and banks), automobiles, retail, travel, IT and manufacturing.
 - For the SME sector, some of the concerns with e-commerce revolve around fear of eroding their existing customer base and technical issues arising out of lack of computer expertise and the cost of necessary hardware and software.

These are some of the preview highlights of a survey conducted by Nasscom to determine the status of internet and electronic commerce proliferation in India.

Appendix - II

Web only Bank

Many traditional brick-and-mortar Indian banks as well have started offering online accounts, but there are also Web-only banks in the USA, such as NetBank. Besides convenience, these banks offer superior rates and lower fees. Surveys have shown that these banks have the best deals on interest checking, CDs, and money-market accounts. One recent comparison found that the average Web-only bank paid 3.4 percent on interest checking-five times better than the 0.7 percent at traditional banks; the average interest on CDs from Web banks was 6.35 percent vs. 4.9 percent for traditional institutions; and the average money market rate from e-banks was twice that of the traditional. It's also possible to apply for a credit card online and make electronic payments to your card account.

NetBank® : A case study

Founded in October 1996, NetBank®, is one of the largest FDIC-insured banks operating solely on the Internet and the first to achieve profitability. Already boasting more than 100,000 accounts and \$1.5 billion in assets, it serves customers in all 50 states of the USA and more than 20 countries. Plus, it's still growing rapidly. Last year accounts increased by more than 300 percent-an extraordinary number for the banking industry. NetBank relies on state-of-the-art technology to pass along operating cost savings to customers. When it came to building its technological infrastructure-including the complete systems to offer customers anytime, anywhere banking-NetBank used secure, high-availability e-commerce outsourcing. The software provider of NetBank provides the network and computer hardware that lets customers of NetBank and other financial institutions dial up and conduct their banking business over the Internet. It also runs and maintains the software and is responsible for upgrades and custom integration.

Thanks to the technological backbone and outsourcing services provided by the technology, NetBank's Web site can handle thousands of successful log-ins each day from customers. It can deliver speedy, reliable online transactions, which is crucial to attracting and retaining customers. Plus, the flexibility of system allows NetBank to offer a variety of new products and services online-such as wireless account access-through other business partners. Through different interfaces, the infrastructure behind NetBank lets customers interact exclusively with the NetBank brand name online, helping the bank build brand loyalty.

The secure data centers of NetBank support all types of customers, from the Internet-only banks to the largest financial institutions. NetBank also provides high-level security such as intrusion detection and firewall protection, which guards against hack attempts and other security risks. Uninterrupted power supply, diesel power generators, redundant systems, and other features eliminate single points of failure and are key factors in providing consumer access to their banking information 24 hours a day, 365 days a year. Later this year, NetBank plans to introduce account aggregation services that will allow customers to manage all of their financial accounts, including ones at other institutions, through the NetBank site. NetBank will capture valuable customer information in a data warehouse to be able to identify opportunities to cross-sell other services. Capturing this data is a vital feature in the era of e-commerce. Companies must understand consumer trends and generate answers to complex marketing questions. Consequently, data warehouses have evolved from passively cataloging batches of data to actively serving as tools for managing customer relationships on a one-to-one level.