

Apple: Then and Now Editor's Outlook

Two years ago, I wrote in my first Editor's Outlook about the resurgence of Apple, due in no small measure to the overwhelming popularity of its iPod personal music and video players, the first of which has recently celebrated its fifth birthday. In that column, I wondered how Apple's growing market share in the PC realm would impact the software landscape for Mac users, particularly in terms of programs for investment analysis and tracking.

Fast forward two years to Apple's recently reported results for the fourth quarter ending October 31, 2008—overall sales increased 27% as the company sold 6.9 million iPhones, 2.6 million Macs, and 11.1 million iPods. Despite Apple's continued strong growth, it has yet to crack 10% market share in the U.S, according to Gartner Inc. Furthermore, few, if any, financial software makers are jumping on the Apple bandwagon, and for very good reason: They can choose to cater to less than 10% of the U.S. PC market or go after 85% to 90% of the market by writing a Windows-based application. As a result, the historical dearth in investment analysis and tracking programs continues. It is for this reason that I continue to recommend Windows-based PCs for those looking to use the best computer-assisted investment tools on the market today [see the "Annual PC Buyer's Guide" in this issue starting on page 19].

Unfortunately for avid Mac users, it is Apple's own business strategy that leaves you wanting for software or having to purchase additional software—such as Boot Camp or Parallels—that allows you to run Windows XP or Vista on an Intel-based Macintosh computer. Over the last several years, the biggest growth in the overall PC market has been in the so-called budget notebook systems, which usually cost less than \$1,000. Meanwhile, only the most sophisticated investment titles require more computing power than these "low-end" systems offer.

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Feature: Top Picks in Computerized Investing Products

By Computerized Investing Staff

For over 20 years, Computerized Investing has been providing unbiased information and reviews on software and Web sites geared toward individual investors for investment analysis, research, tracking, and education.

Each year we like to further distill this information and highlight what we consider to be the "best of the best." So, we gladly present this annual editors' guide to the top investing products with our top software and Web choices for portfolio management, mutual fund screening and analysis, stock screening and analysis, and technical analysis and charting.

The Selection Process

We present our top picks by highlighting selections for both Macintosh and Windows systems, as well as top Web offerings.

We have not limited our selections based on whether they are free or fee-based, Web sites or software-based. We have made sure to include a top Web-based pick in each area, which is especially important for Mac users who often find that Web-based tools for screening and analysis exceed the usefulness and functionality found in the best Mac-based software programs.

These top picks represent the personal favorites of the editors of Computerized Investing. They are top-rated software programs and Web sites that we use for

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Editor's Top Picks

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PC Buyer's Guide

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our own analysis, so we can recommend them to our readers without hesitation. We have rated the choices relative to the other services in their category using our standard scoring system and have tried to select products that meet the needs of the typical investor.

We judge these services in each of the following categories: performance, documentation, and ease of use.

Performance ratings indicate how well the program or service accomplishes its stated objectives. We make adjustments for specific areas such as fundamental screening, where we grade the performance of the screening process separately from the depth and quality of the data provided by the application.

Documentation rates the quality of the printed materials, on-line help, and manufacturer support.

Ease of use rates how simple the core application is to install, learn, and operate.

We rate the criteria on a scale of one to five, with five denoting the best score possible. While it is important to consider all of the factors when selecting an investment analysis tool, our ratings place the greatest emphasis on performance.

When deciding on which services to include here, we did not merely choose those with the highest price tags or the most robust set of features. Rather, these Web sites and software programs are the ones we feel are best suited for the typical individual investor in their respective areas of analysis. You will find that some of those picked as editor's choice are general purpose in nature, while others are more advanced applications. Most on-line tools pale in comparison to the sophistication and capabilities of software, but the on-line selections we've chosen here

tend to be rather sophisticated Web tools.

As with any winnowing-down process, many readers will not find our top picks a good fit for their needs. If you are looking for more choices in programs or Web sites for the investment areas covered here, please visit the Computerized Investing area

“These top picks are software programs and Web sites that we use for our own analysis, so we can recommend them to our readers without hesitation.”

of AAll.com for our archive of past comparison articles. Furthermore, if there is a particular Web site or software package you use for your own investment analysis or tracking that you have not seen covered in CI, please feel free to bring it to our attention by E-mailing us at ci@aaii.com.

Portfolio Management

Many investors like to keep track of their portfolio movements on a daily or even intraday basis. Web-based portfolio managers, also referred to as on-line portfolio trackers, can provide a place to easily record transactions and track performance. Portfolio management software programs tend to be more sophisticated and have a greater level of portfolio monitoring tools. Which type you use depends on the level of reporting and data you need.

Most on-line applications are

offered through a comprehensive financial Web site, which includes additional evaluation and research tools. On-line applications typically offer limited customization and a smaller set of performance calculation tools compared to their software counterparts. “Reports” from on-line tools are usually in the form of views, some printer-friendly. However, for many investors these can be an inexpensive way to keep tabs on portfolio performance on a day-to-day basis. The biggest draw for on-line portfolio tools is the constant alerts and easy access to timely data.

Portfolio management software systems tend to be more advanced systems that can track multiple portfolios and their interaction, the allocation and classification of holdings, and the performance of your overall portfolio. Many also offer useful accounting systems that track the income and gains or losses on your transactions to help you calculate the tax liability of your portfolio activities.

An important feature offered by any good portfolio management system (on-line or software) is the ability to specify security lot assignments for any given transaction. Reinvesting dividends from mutual funds and stocks can mean tracking numerous lots (units traded) over a long period of time. A system that automatically matches buy and sell lots for different accounting strategies for the purpose of reducing tax exposure can be a big help around tax time, especially for those who do their own taxes.

Portfolio reports help you see a clear picture of how well your investments are performing. Good portfolio management tools are able to help you analyze the performance of individual securities, asset groups, and your portfolio as a whole, usually compared to a benchmark or index.

BetterInvesting Portfolio Manager

The screenshot displays the 'Appraisal Report' for 'Joe Q. Public'. The report is organized into several sections: Money Market Funds, Exchange Traded Funds, Mutual Funds, and Common Stocks. Each section lists individual securities with columns for Quantity, Unit Cost, Total Cost, Mkt Price, Mkt Value, Unreal G/L, and % G/L. The total portfolio value is shown as \$227,525.14.

Security	Quantity	Unit Cost	Total Cost	Mkt Price	Mkt Value	Unreal G/L	% G/L
Money Market Funds							
ML CMA Account			\$27,156.20		\$27,156.20		
Exchange Traded Funds							
iShares MSCI Emerg	300.00000	\$37.37	\$11,211.00	\$42.92	\$12,876.00	\$1,665.00	14.9
iShares S&P MidCap	100.00000	\$81.00	\$8,100.00	\$80.47	\$8,047.00	-\$53.00	-0.7
iShares S&P Small C	120.00000	\$68.57	\$7,028.40	\$61.25	\$7,350.00	\$321.60	4.6
Mutual Funds							
Dodge & Cox Stock	150.00000	\$122.00	\$18,300.00	\$112.71	\$16,906.50	-\$1,393.50	-7.6
Vanguard Int-Tm Inv	1,500.00000	\$10.06	\$15,082.00	\$9.36	\$14,040.00	-\$1,042.00	-6.9
Vanguard Lg-Tm Inv	2,250.00000	\$9.20	\$20,698.50	\$8.39	\$18,877.50	-\$1,821.00	-8.8
Common Stocks							
At&T	154.61700	\$42.58	\$6,582.86	\$55.25	\$8,542.59	\$1,959.73	29.8
Apple Computer	60.00000	\$74.20	\$4,451.99	\$157.33	\$9,439.80	\$4,987.81	112.0
Cabells Inc	500.00000	\$12.43	\$6,215.24	\$11.44	\$5,720.00	-\$495.24	-8.0
Chicos Fas Inc	300.00000	\$31.86	\$9,558.50	\$5.57	\$1,671.00	-\$7,887.50	-82.5
Community Bank Syst	325.00000	\$21.23	\$6,889.96	\$23.18	\$7,539.50	\$639.54	9.2
Exxon	153.31800	\$40.72	\$6,242.73	\$81.84	\$12,547.54	\$6,304.81	101.0
General Electric	238.72630	\$28.57	\$6,819.27	\$28.44	\$6,789.39	-\$29.88	-0.4
Hologic Incorporat	575.00000	\$22.32	\$12,832.65	\$19.56	\$11,247.00	-\$1,585.65	-12.4
Johnson & Johnson	150.00000	\$66.32	\$9,947.46	\$68.61	\$10,291.50	\$344.04	3.5
L-3 Communications	150.00000	\$65.48	\$9,822.45	\$98.01	\$14,701.50	\$4,879.05	49.7
Paychex	198.47860	\$25.06	\$4,973.32	\$32.73	\$6,496.12	\$1,522.80	30.6
Walgreens	400.00000	\$33.32	\$13,328.72	\$34.14	\$13,656.00	\$327.28	2.5
Waters Corporation	200.00000	\$63.94	\$12,787.11	\$68.18	\$13,636.00	\$848.89	6.6
...Totals...			\$218,836.34		\$227,525.14	\$8,688.80	4.4

BetterInvesting Portfolio Manager (Windows Choice)

By BetterInvesting
www.biportfoliomanager.com

(877) 275-6242

\$169; free 45-day trial

- Performance 5
- Documentation 5
- Ease of Use 5

BetterInvesting's Portfolio Manager is a very user-friendly tool with many advanced capabilities. The program can be downloaded or installed using a CD-ROM. After installation, you will be asked to set up your portfolios. The set-up wizard is extremely helpful for first-time users.

A quick portfolio can be created by manually entering transactions, but you can also import transactions from a number of brokerage firms. Most data is only downloadable for an 18-month period, so you may have to enter older transactions by hand.

The homepage of the portfolio tool provides a quick glimpse of each account's holdings and performance. One thing that is lacking is the ability to view all accounts at once on the homepage. However, you can generate reports with all of your holdings.

Adding transactions by hand is not

complicated. The transactions screen is simple and self-explanatory to use. You can view transactions by date, type or symbol.

Reports are fully customizable and include tables and graphs. You can see how your portfolio stacks up by asset class, sector size and investment objectives. Portfolio Manager also offers fundamental ratio analysis.

In recordkeeping for tax purposes, Portfolio Manager allows you to track dividend reinvestments, capital gain distributions, investment income and more. You can also assign lots to sales using the first-in first-out, specific-identification or average-cost methods. Tax related reports are also available.

A great tool for many investors who used Captools in the past is a Captools converter. Version 5 or higher of Portfolio Manager includes this capability and you can download a free update if you have an older version. Most transaction types can be converted; you can view a list of the transaction types available for conversion at the Web site. Converting the transactions is not difficult, but does require some work. Complete instructions are available in the Help section of the Portfolio Manager program.

Portfolio Director (Mac Choice)

Portfolio Systems
www.portfoliodirector.com
 (888) 700-3715
 \$300/mo.

- Performance 5
- Documentation 5
- Ease of Use 4

Portfolio Director is primarily geared toward investment professionals, but it is one of the most powerful software programs for portfolio management that is compatible with Mac systems.

The program allows you to create portfolio groups for different investors; this could be useful for tracking investment portfolios for numerous family members.

Portfolio Director uses a tab format, which makes report generation and portfolio upkeep simple.

After installing the program, you are taken step-by-step through the portfolio creation process. You can then begin adding transactions manually or importing them. Only a handful of brokers' transactions are available for import.

Manually entering transactions is made simple with a step-by-step format. You can choose from over 30 security types including REIT, stock, annuity, corporate bond, Treasury bond, TIPS, ETF, money market, future, option, index and other.

Stocks can be recorded as a buy, sell, short sell or buy to cover. You can classify securities even further if needed in the order-entry section. A few unique features are the "current market price" data point and the "trade reason" entry field.

Other transaction types available include dividends, reinvestment of funds, splits, mergers and interest.

Once transactions have been entered, report generation is simple. The "Performance Reports" tab organizes the report options into categories: performance, asset allocation, fixed income and stock/future option.

The "Summary Reports" tab includes portfolio summary, tax,

position, and trade lot and gain/loss reports. All reports can be customized, downloaded as PDFs and saved for later use.

Portfolio Director probably offers more functionality than most individual investors need, but this is a very powerful tool for investors using a Mac.

Morningstar.com Free & Premium Portfolio Tools (Web Choice)

By Morningstar, Inc.

www.morningstar.com

(800) 735-0700

Basic service, free; Premium service, \$16.95/month; free 14-day trial

Performance	5
Documentation	4
Ease of Use	5

Morningstar.com offers market news, stock and fund screening, portfolio tracking and security analysis. Much of the content is available for free. Premium service includes more in-depth portfolio tracking and stock and fund screening.

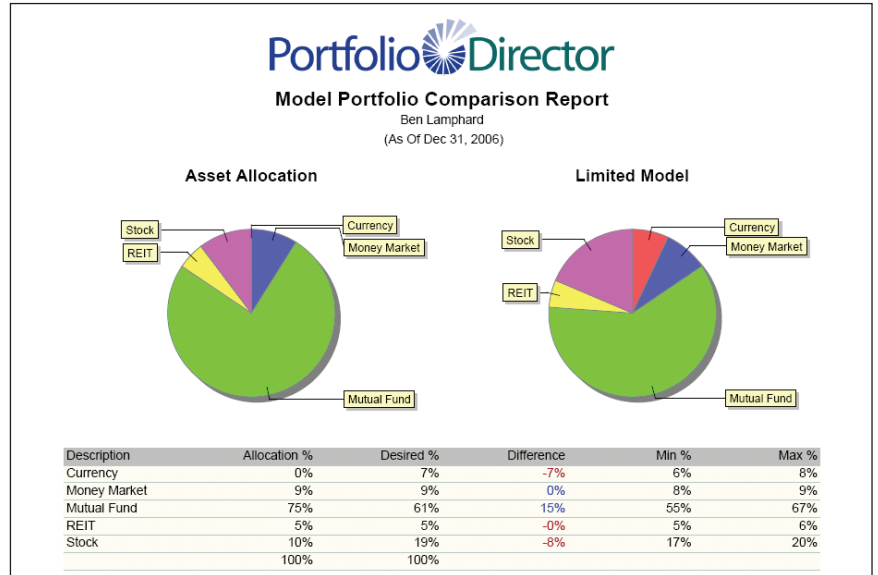
Morningstar's premium portfolio tool allows for the creation of 25 portfolios and 25 watchlists with the ability to add up to 100 stocks and mutual funds, 20 bonds and 20 cash positions to each. A wide range of E-mail alerts is offered covering portfolio performance, news, and relevant changes in an investment such as a stock split, dividend, change in earnings estimates, change in a mutual fund's management style or change in expense ratio.

You can import data from Microsoft Money, Excel, Quicken and various Web sites—including MSN Money and Yahoo! Finance—to create a portfolio, or you can enter the transactions by hand.

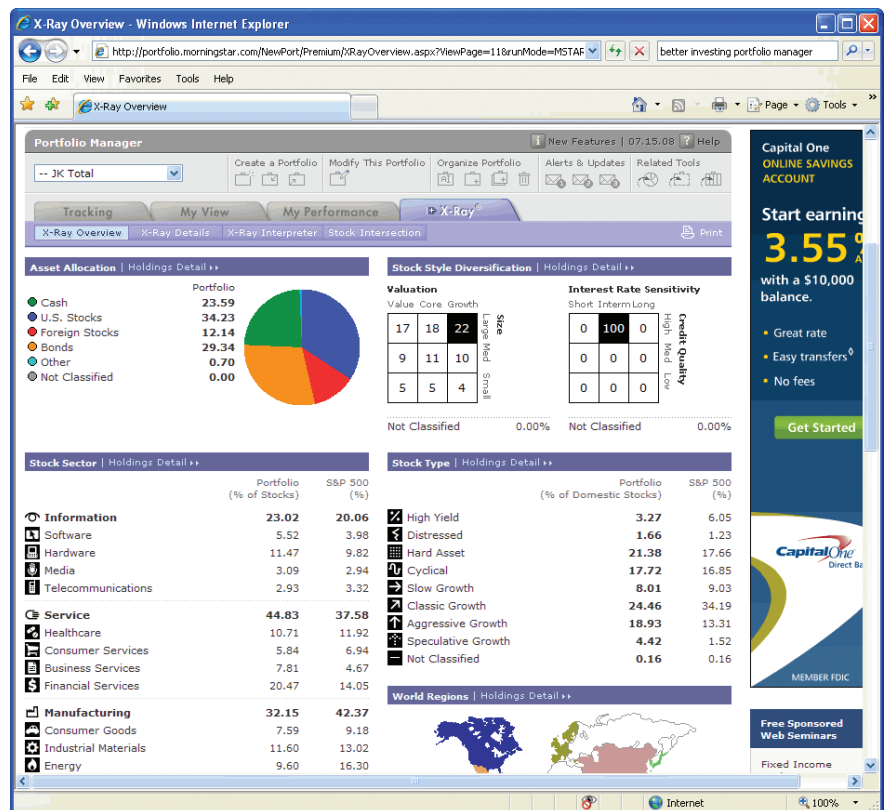
Custom views can be created by choosing from a list of over 75 data points that include performance, risk, and fundamental criteria. You can add up to 35 criteria to each custom view.

Premium members can use the

Portfolio Director



Morningstar.com Portfolio Tools

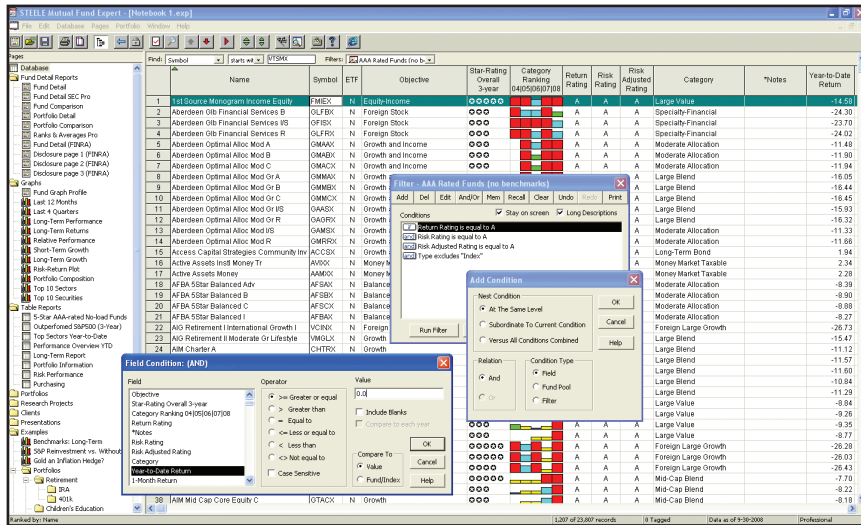


X-Ray feature, which gives an in-depth analysis of your portfolios one at a time. You can easily combine portfolios if you would like a full analysis of multiple portfolios.

The X-Ray tool gives a breakdown

of each portfolio by sector, style, security type and region. You can also view a list of fees and expenses and the top 10 holdings in your portfolio. The X-Ray interpreter gives a detailed description of your portfolio's

Steele Mutual Fund Expert



system, investors can find a variety of funds meeting personal risk, return and management style requirements quickly and easily. For example, if you determine that your portfolio is lacking international diversification, a screening service can provide you with a list of no-load, internationally oriented mutual funds with consistent and above-average performance, acceptable risk and below-average expenses.

Steele Mutual Fund Expert (Windows Choice)

By Steele Systems, Inc.

www.steelesystems.com

(800) 315-9002

Personal:

\$264/yr. for monthly updates;

\$128/yr. for quarterly updates

Pro:

\$624/yr. for monthly updates;

\$368/yr. for quarterly updates

Pro Plus:

\$744/yr. for monthly updates;

\$488/yr. for quarterly updates

Performance—Fund Screening 5

Performance—Fund Data 5

Personal 3

Pro 5

Pro Plus 5

Documentation 5

Ease of Use 5

Steele's Mutual Fund Expert comes in three editions, each offering a different level of service. Each edition includes over 23,000 funds in the database. You can download the monthly or quarterly updates from the Steele Web site. Data updates are typically posted within 10 days of the end of the month or quarter.

The Personal version has 95 data points for screening including general fund data (fund objectives, inception date and category) and management information. Performance data includes 10 calendar years of return data; one, three-, six-, nine-, and 12-month returns; year-to-date returns; and annual returns for three, five, and 10 years. You can screen for risk using beta, standard deviation,

asset allocation, performance and diversification. The Stock Intersection Analyzer lists any stock overlaps in mutual fund holdings.

Another valuable tool is the risk analyzer, which evaluates how the securities in your portfolio interact and measures the overall risk of the portfolio.

Data on individual securities is broad and deep. Fundamental, technical and historical data are compared to benchmarks and the market as a whole and interactive charts allow for a visual representation of important stock data.

One annoyance is that the "print" function does not allow you to print your custom view or specific areas of the portfolio analysis tool. You can print a snapshot or a more detailed X-Ray report.

In sum, Morningstar's extra portfolio analysis tools allow investors to do more than simply track portfolio performance.

Fund Screening & Analysis

Investing in mutual funds can be a cost-effective way to own a more diversified portfolio. Furthermore, selecting and managing a portfolio of individual stocks and bonds can be very time consuming, making mutual fund investing even more attractive.

Mutual fund screening can help investors by providing the necessary tools to narrow down the universe of mutual funds to the best funds that suit your needs. Screening involves choosing a set of criteria to find a group of funds with similar characteristics. This screening process is most easily and thoroughly accomplished using a Web site or software program.

Key features to look for when evaluating fund screening tools include the number of funds in the universe, the number and types of fields that can be used for screening and sorting or ranking, and the conditions and values that can be specified for each screenable field.

Also, consider the frequency of data updates and how often performance returns are made available, such as daily, weekly or monthly. Look for annualized returns over long time periods—such as three, five or 10 years—in addition to returns for individual years.

Software programs often have high-powered and highly flexible screening capabilities as well as periodic data updates. Web-based screening tools are either downloaded to your computer or allow you to enter screening criteria directly through your Web browser.

With a mutual fund screening

r-squared and volatility. Additional screening criteria include fees and expense numbers, purchase information and portfolio composition data.

The Professional version has 229 criteria for screening and adds monthly returns for 10 years, SEC 30-day yield, years since inception, annualized standard deviations, Sharpe and Treynor risk data, price-earnings ratios, credit quality ratings and more.

The Pro Plus edition has 714 data points for screening, adding monthly and yearly calendar returns since 1962, 15- and 20-year return data, up and down market performance, risk statistics over varying time periods, and more.

The screener is easy to use and includes a step-by-step process for data entry. Screens can be saved, passing companies can be exported, and views can be created using any of the criteria in the database. You can also rank the results by any of the criteria in the database. Portfolios and watchlists can be created and saved for later use. In-depth reports can be generated and printed for analysis.

For those interested in advanced fund screening in an easy-to-use format, the Steele Systems offerings are a good choice.

Morningstar.com Free & Premium Fund Screeners (Mac & Web Choice)

By Morningstar, Inc.

www.morningstar.com

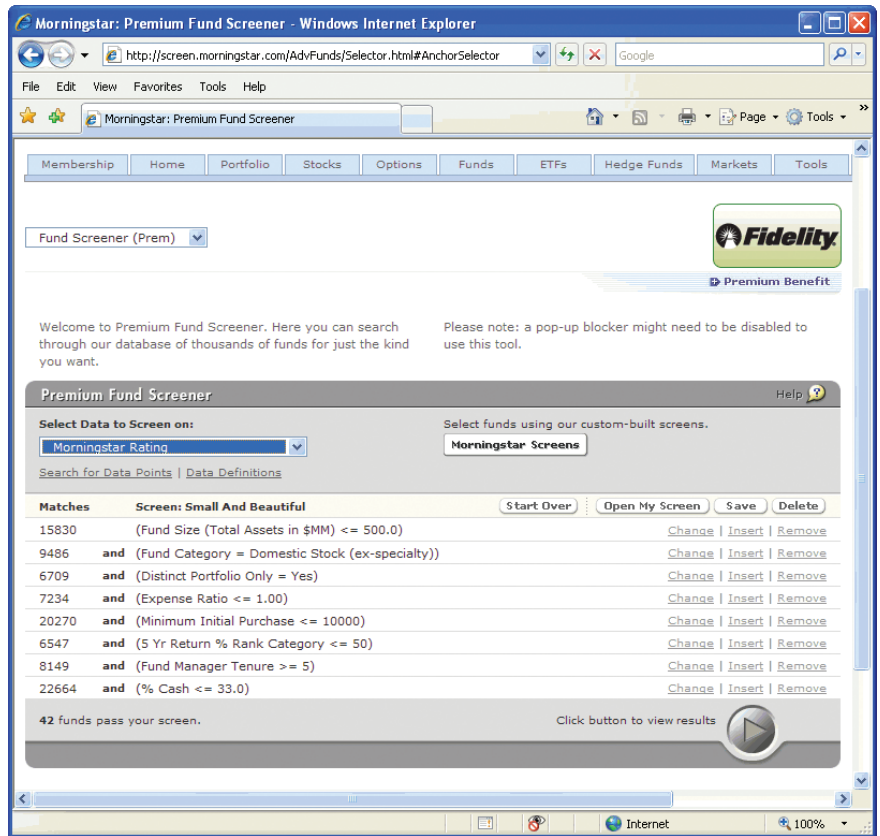
(800) 735-0700

Basic service, free; Premium service, \$16.95/month; free 14-day trial

Performance—Fund Screening	5
Performance—Fund Data	5
Documentation	5
Ease of Use	5

Morningstar offers two fund screeners. The free screener has 18 data points for screening including risk measures, performance data, fees and general fund data. Results can be sorted by a number of criteria and only the top 200 funds meeting the

Morningstar.com Premium Fund Screener



criteria are listed.

Morningstar's Premium Fund screener is part of its Premium service, which costs \$16.95 per month. The screener has over 20,000 funds and over 300 criteria for screening. The screener is very user friendly, but you might need to disable a pop-up blocker to use it; as you choose criteria to enter, a new window opens allowing you to customize the data points for screening.

Criteria include: general fund data like fund family and fund style; Morningstar ratings and risk measures; performance data with 10 years of calendar-year returns, monthly performance, and load-adjusted and aftertax returns; risk measures including Sharpe ratio and standard deviation; fund composition data such as weightings and turnover; and management data including fees and expenses and fund manager tenure.

Once you have chosen a criterion

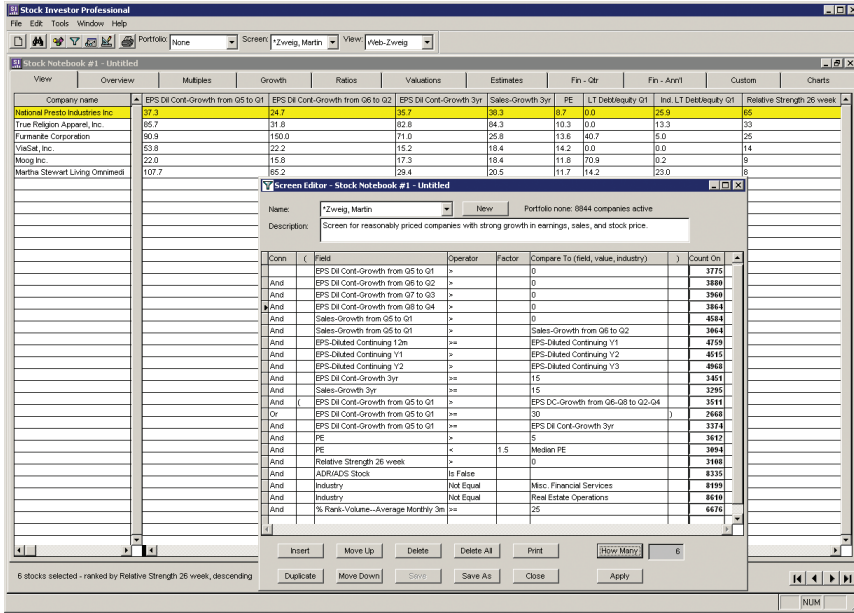
for screening, you can compare the data point to a number, a benchmark, a category average, or a specific index or fund. You can see the number of funds passing each individual criterion as well as those passing all criteria. This makes it simple to adjust the criteria when too many or too few funds pass. All screens can be saved for later use as well.

The Premium screener displays all funds that meet the criteria. Funds can be ranked by a number of data points as well. A link to add the funds to a portfolio makes creating portfolios and watchlists simple.

A great tool within the Premium Screener is the Data Definitions tab, which gives detailed information about each screening criterion. You can also see quartile ranking values for certain criteria. This is a useful tool for picking meaningful values for screening.

For investors wanting a reasonably priced mutual fund screener with

Stock Investor Pro



good capabilities, Morningstar's Premium Fund screener is a great fit.

Stock Screening & Analysis

Stock screening services allow you to filter thousands of stocks based on various criteria almost instantaneously to identify a more manageable group possessing similar qualities that merit further analysis.

Today, the vast majority of stock screening services are Web-based, with only a handful of disk-based applications still in existence. In general, there is usually a trade-off between Web-based services and their disk-based counterparts: Disk-based applications tend to be more flexible and powerful. However, Web-based services such as the ones discussed in this comparison often are able to provide more timely data and more frequent data updates.

The top packages examine a wide universe of stocks, supply a deep set of information for examination and screening, and provide a great deal of flexibility to match the screening parameters to your personal investment philosophy. The packages should also have a wide range of pre-programmed filters to illustrate the

screening process and help users get started more quickly.

Beyond identifying potential investment opportunities, most screening systems also encapsulate company and industry data that serve as a framework to investigate any investment tips or ideas that come your way in an organized, consistent fashion.

Stock Investor Pro (Windows Choice)

By AAIL
www.aail.com
 (800) 428-2244
 \$247/yr. (\$198/yr. for AAIL members)

- Performance—Stock Screening 5
- Performance—Stock Data 5
- Documentation 5
- Ease of Use 3

[Note: Stock Investor Pro is a product of the American Association of Individual Investors.]

Stock Investor Pro is a Windows-based fundamental stock screening and research database program offering users the ability to update data on a weekly or monthly basis with

on-line updates or with a monthly update CD. The program provides powerful screening tools coupled with a deep set of data and a wide range of built-in screens. Stock Investor contains fundamental data on approximately 8,800 companies along with comparison information on 12 sectors and 100 industry groups (as defined by Thomson Reuters). The program allows you to look up, analyze, and screen for companies meeting specific criteria on over 2,000 variables. Consensus earnings estimates are provided by I/B/E/S and fundamental data is provided by Thomson Reuters.

The program includes detailed income statements, balance sheets, and cash flow statements for seven fiscal years and eight fiscal quarters. Financial statements can be viewed as-reported or on a per-share basis, a period-by-period percent-change basis, or a common-size basis. Stock Investor Pro provides over 300 ratios and growth rates and allows you to create up to 250 custom variables. All variables in the program, including custom fields, can be viewed, exported, or used in stock filters.

The screening function can screen for companies meeting criteria using any data field in the program, along with comparisons to database averages or sector and industry norms. The program includes over 50 predefined screens that follow the techniques of well-known investors such as William O'Neil and Benjamin Graham.

Users can track lists of stocks over time and run filters to see which stocks in a given portfolio pass a specified stock screen. The program comes with a wide array of predefined reports and users can create customized reports that can be viewed on-screen and printed. Data can be exported into a number of text, spreadsheet, and database formats.

Given its complexities, users will find that Stock Investor Pro has a steeper learning curve than other programs. However, the program offers an on-board help system and

extensive Web-based resources at AAll.com to help users familiarize themselves with Stock Investor Pro's robust features.

Morningstar.com Free & Premium Stock Screeners (Mac Choice)

By Morningstar, Inc.

www.morningstar.com

(800) 735-0700

Basic service, free; Premium service, \$16.95/month; free 14-day trial

Performance—Stock Screening

Free 3
Premium 4

Performance—Stock Data

Free 4
Premium 5

Documentation

5

Ease of Use

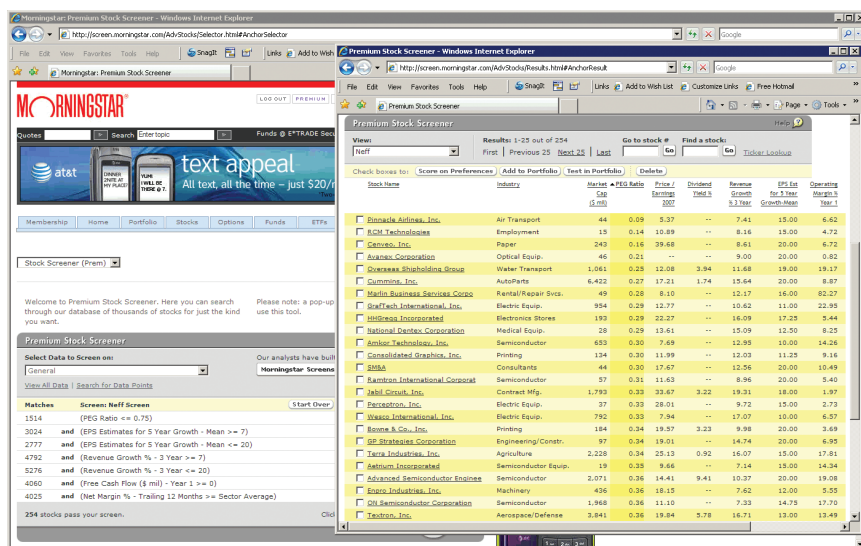
Free 5
Premium 4

Stock research on the comprehensive Morningstar.com site consists of stock screening coupled with research reports. Morningstar provides ratings and analyst reports on 2,000 stocks in over 100 industries. These reports are restricted to Premium subscribers, but all users can screen for stocks with high grades.

Free screening covers 18 basic elements on a database of over 8,000 stocks, while the Premium screening module covers over 470 criteria. Free screening is limited to performing comparisons against preset constant values, and users cannot save the screens for later use. There are also nine predefined screens, which are accessible to anyone. The Premium screening tool has considerably more flexibility. Subscribers may screen against sector and index benchmarks and save their custom screens.

Comprehensive stock reports start with an overview snapshot and lead to: a detailed company profile; financial statements and ratios; charting; stock price performance statistics; stock, industry, and market multiples; earnings estimates and analyst opinions; industry snapshot; insider and

Morningstar.com Premium Stock Screener



institutional shareholder activity; SEC filings; and news. The financial statements provide 10 years of income statement, cash flow, and balance sheet data in total dollar, per share, and even common size formats. The only knock on their data set is that it does not include detailed quarterly statements. The Premium reports add details including Morningstar ratings and analyst research.

MSN Money Deluxe Screener (Web Choice)

By Microsoft

www.investor.com

Free

Performance—Stock Screening 4

Performance—Stock Data 5

Documentation 5

Ease of Use 5

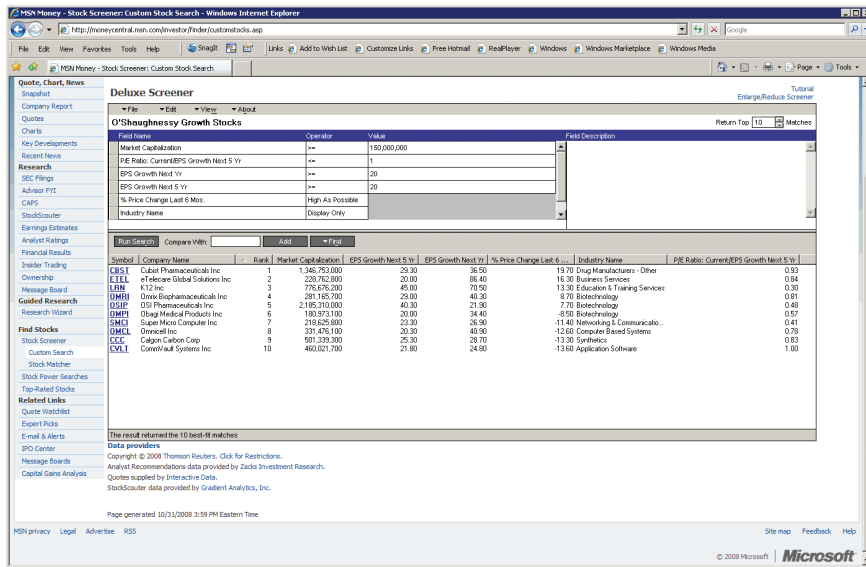
For many years, the research and screening module on MSN Money has been our benchmark for rating all other on-line services. The company coverage is both broad and deep. The site pulls together the content of Gradient Analytics, Thomson Reuters, Zacks and ComStock into a comprehensive company report. Navigation between the various modules is seamless and well planned.

Screening flexibility is well above

average among Internet services—free or fee-based. The screening editor is an applet, or program, that we are able to run on Windows-based systems using both Internet Explorer and Netscape browsers (the Deluxe Screener will not run on Mozilla FireFox). On Mac systems, however, MSN displays a more basic Web-based screening module, as the technology used to build the screener is only Windows-compatible. Furthermore, the site only supports Windows 2000 or later.

The Deluxe Screener has a database of over 8,000 companies and over 190 screening elements. Screening is interactive, with passing companies displayed as criteria are added. The criteria encompass a full spectrum of elements ranging from basic company information, such as market capitalization, to changes in analyst recommendations and proprietary stock ratings provided by Gradient Analytics. Criteria can be compared to constants, other fields or other companies, and index or industry norms. It is even possible to create custom fields in the screening editor, a rare feature among on-line services. However, given its complexity, it is unfortunate that the screener does not indicate the number of companies passing each filter. Furthermore,

MSN Money Deluxe Screener



you can only display the top 200 results of any screen. However, you can save custom screens and can select from over 30 predefined stock screens.

Technical Analysis & Charting

Technical analysis is the study of price and volume data to identify historical patterns, which may help predict future price activity. Technicians either watch for patterns to develop on charts or track the levels of technical indicators for buy and sell signals.

Top technical analysis and charting services offer a broad collection of popular chart types and indicators and allow you to plot them over several years of data. More advanced services allow you to use charts and indicators to generate trading systems, which you may also be able to backtest and optimize.

Technical screening involves locating securities that exhibit certain technical properties, such as price and volume behavior, moving-average breakouts, chart patterns, or overbought/oversold conditions based on indicators. Coupled with screening is the ability to receive alerts when certain "technical" events occur.

The most striking difference between Web sites and software is in the level of features each has to offer: Software-based technical analysis applications largely dwarf the Web-based services. Most Web-based charting services offer the basic technical analysis features—mainly, charting and the ability to overlay technical indicators and drawing tools. However, you will often find that the libraries of technical indicators are less robust than what you would find with technical analysis software—although there has been marked improvement in recent years.

MetaStock End-of-Day (Windows Choice)

By Equis International

www.equis.com

(800) 508-9180

End-of-day software only, \$499; end-of-day software & Reuters DataLink, \$59/mo. or \$565/yr.

Performance

Charting & Indicators

Trading Systems

Screening

Documentation

Ease of Use

MetaStock has an impressive ar-

ray of technical indicators, charting capabilities, and system development and optimization tools, coupled with unmatched ease-of-use, making it one of the most complete end-of-day charting and analysis packages on the market today.

MetaStock offers a wide variety of charting styles, with nine chart types to choose from. Chart windows are object-oriented, so any modifications to a chart or indicator on a chart can be done by right-clicking on the appropriate area. The program's SmartCharts feature automatically saves a chart, along with the underlying specifications, preserving it for the next time it is opened. Users can also create chart templates that allow them to apply the same set of indicators and studies to different securities.

MetaStock comes with over 200 technical indicators and line studies. To help gauge the direction of the overall market, MetaStock offers over 90 "broad market indicators"—monetary indicators as well as momentum indicators for both the NYSE and NASDAQ exchanges.

More advanced users can create their own indicators using the program's indicator builder, which includes over 200 mathematical, statistical, and technical operators. The only downside is that MetaStock's "programming language" takes some getting used to.

The Explorer function allows you to find, compare, filter, rank, search, and list multiple indicator values for multiple securities, including stocks and futures. Users can view a list of securities that are generating buy or sell signals based on indicator or price levels. MetaStock ships with a set of predefined scans, and you can create and save custom scans with the same programming language used to create custom indicators.

For program trading, MetaStock now comes with over 50 trading systems and allows you to create your own trading systems. Preinstalled and user-defined trading systems can be backtested and optimized with the

system tester. This feature enables users to run one system on a single security, many systems on a single security, a single system on multiple securities, or multiple systems against multiple securities—all without risking real dollars. It also lets users change and edit variables in testing—entry and exit points, commissions and slippage—to help create a more realistic picture of the trading scenario's results.

Given its complexities, MetaStock is still one of the more user-friendly applications out there. However, if you have trouble, Equis gives its customers a wealth of resources to get the most out of its programs—everything from exhaustive manuals to on-line classes and user groups.

Users can purchase MetaStock and a subscription to the Reuters Data-Link data service for \$59 a month (\$565 per year), or they can purchase the MetaStock software along with The Downloader (Equis' data downloading software) for \$499 and use eSignal as the data provider. MetaStock's DataOnDemand technology keeps you from having to store large amounts of data on your system. Via an Internet connection, the program retrieves only the information you need and temporarily holds it in the computer's memory.

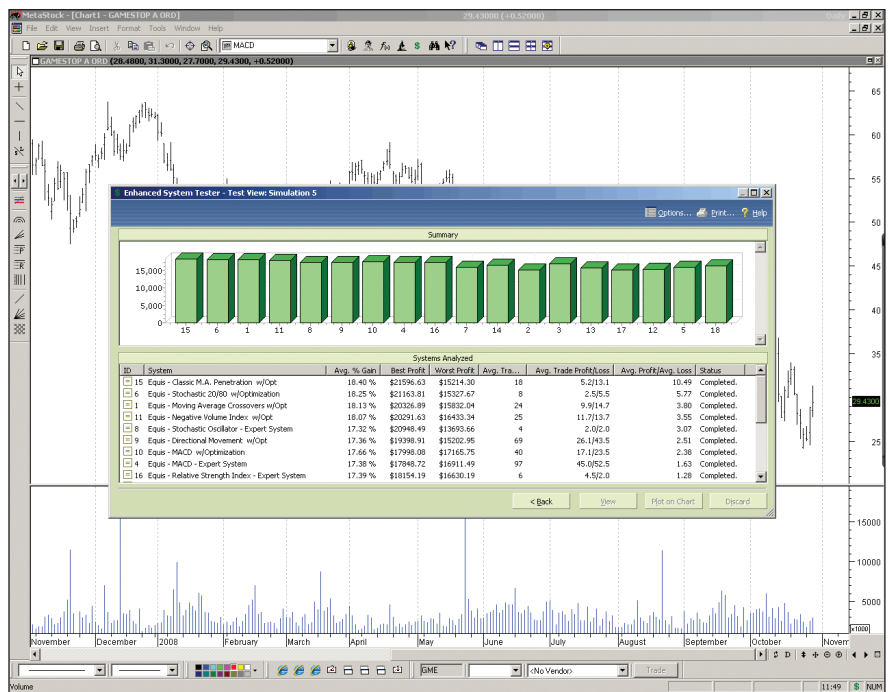
Investor/RT (Mac Choice)

By Linn Software, Inc.
www.linnsoft.com
 (770) 761-8551

Standard, \$20+/mo.; Professional, \$30+/mo.; Trading System Tools, requires Pro subscription + add'l \$40/mo.

Performance—	
Charting & Indicators	4
Performance—Trading Systems	
Pro Backtester	2
Pro Complete	1
Performance—Screening	
Standard	4
Pro	5
Documentation	5
Ease of Use	4

MetaStock End-of-Day



While we include Investor/RT as editor's choice among Mac-based technical analysis programs, it is one of the rare programs offered for both the Mac and Windows operating systems. It offers practically everything an active technical trader would need—end-of-day as well as intraday analysis, several different chart types, custom indicator and trading systems creation, system optimization, order placement, and portfolio management functions.

There are two versions of Investor/RT. Both real-time and end-of-day versions of the software—Investor/RT Pro and Standard, respectively—support a wide variety of datafeeds through the Internet or satellite. In fact, users can choose from 10 different data services. A wonderful cost-effective feature is the ability to download historical quotes for free from Yahoo! Finance.

All versions offer over 20 different chart types along with a library of over 130 technical indicators. In addition, Investor/RT provides candlestick pattern recognition. Users may select from any of the over 30 predefined patterns and the program

will mark each pattern's occurrence on the display—even on an intraday basis.

Investor/RT Professional also offers LinnSoft's Real Time Language (RTL) capabilities. With the RTL, users can create custom indicators, trading systems, and scans. Using the scan function, users have the ability to identify trading signals being generated. Scans can be based on technical indicators, fundamental data, and current or historical prices and can be run using tick or minute data as well as daily, weekly, and monthly data. Once a scan is completed, the results are presented on a quote page and can then be sorted by a number of data elements.

Users of the Professional version of Investor/RT also have the option of purchasing the Trading System Tools for an additional \$40 per month for advanced trading system development, backtesting, and optimization. The trading system development and backtesting feature adds the tools users need to develop and backtest trading systems using RTL. This tool allows users to organize trading signals into a set of trading rules and

Investor R/T



StockCharts.com



then backtest these rules over any desired time period. To aid you in your analysis of backtesting results, the

program also offers detailed reports and summary statistics. The Trading System Tools also

adds system optimization to its list of features. The trading system optimization feature allows users to backtest various combinations for the variables used in the trading system to find the optimal values and periodicity for a given trading system. Once the user has developed, backtested, and optimized a system, the program will plot the system on a chart using either real-time or end-of-day data, depending on your data subscription. With the trading system deployment module, users can set up “signal actions” that can communicate trading orders when trading system rules are triggered. These orders can then be sent to simulated trading portfolios within Investor/RT or to real brokerage services.

Overall, the Investor/RT program has features and functionality that rival any of the high-end packages discussed here. Mac users will also appreciate having such a robust system at their disposal. A wide variety of both end-of-day and real-time data sources is an attractive feature for those wishing to “shop around” for their data provider.

StockCharts.com (Web Choice)

By StockCharts.com
www.stockcharts.com
 Free; Basic, \$14.95/mo.; Extra!, \$24.95/mo.; ExtraRT!, \$34.90/mo.

Performance

Charting & Indicators	5
Trading Systems	na
Screening	4
Documentation	5
Ease of Use	5

StockCharts.com is one of the most well-rounded sites of its type, offering robust charting and scanning capabilities, as well as a rich collection of technical analysis educational content.

For charting, StockCharts.com offers one of the best collections of charts available on the Internet. The site features line and candlestick charting, as well as three options for point & figure charting. The site au-


tomatically displays pattern alerts on all of the point & figure charts. The site offers over 40 technical indicators and line studies, and non-subscribers can plot up to seven indicators on a single chart (17 to 51 for paid subscribers). Subscribers and non-subscribers alike can modify the parameters of the technical indicators as well as dictate the timeframe charted. Subscribers can save charts to a favorites list for future analysis and save their chart settings. One significant drawback is that the site's free charting service only offers three years of historical data for charting. A subscription is required to chart longer periods as well as to chart intraday data—real-time charting,

albeit not streaming, is available for \$34.90 per month.

StockCharts.com offers over 60 free stock scans based on a variety of technical indicators as well as point & figure and candlestick charts. These free scans look for stocks traded on the NASDAQ, NYSE, Amex, and Canadian exchanges, as well as mutual funds.

For \$9.95 per month, Basic subscribers have the limited ability to create but not save their own screens, and are only able to view up to 10 results per scan. Both Basic and Extra! members have over 130 technical fields to use for custom scans. Basic members use a watered-down screening module, offering scanning

on up to four technical elements at a time. With an Extra! Membership (\$19.95/mo.), subscribers can scan on an intraday basis and have access to an advanced, albeit cumbersome, user interface where they can enter in their own scanning expressions. Extra! subscribers can also create custom scans and view all the results of a scan (up to 1,000 symbols).

For those looking to learn more about technical analysis, there is extensive educational content available in the Chart School section of the Web site. Articles cover the basics of investing, charting and technical analysis, as well as how to use trading strategies and technical indicators. 

Annual PC Buyer's Guide

By Wayne A. Thorp, CFA

As we near the end of another year, it is time again for our annual PC buyers' guide. Over the years, the goal of this article has been to provide direction for those looking for a personal computer with which to perform common investment tasks, such as portfolio tracking and management, stock and mutual fund screening and analysis, and technical analysis and charting, along with general-purpose computing such as Web-browsing, E-mail, word processing, and spreadsheet building. The recommendations we provide herein are made with such users in mind. Depending on your individual computing needs, your ideal system may be more or less advanced than the systems we recommend.

Defining Your Needs

As the cost of a new computer continues to fall, the worst thing you can do is skimp and end up with a system that is not powerful enough

to meet your current needs, let alone any future ones. Some people try to save money by purchasing a marginal system, only to end up with a system that becomes obsolete within only a couple of years and needs replacing

"Any of today's mid-level systems will be able to handle almost any investment analysis task you may undertake."

or upgrading at additional cost.

Another mistake some people make when purchasing a new PC is to buy one that is "well-equipped," even if they don't need all the options. Many PC shoppers are seduced by features and options that, instead of benefiting them, only needlessly add to the final price tag.

Any of today's mid-level systems will be able to handle almost any investment analysis task you may undertake.

Given the speed with which computer technologies change these days, a mid-to-high-end desktop system bought new today will, on average, provide you with plenty of computing power over the next three to four years. Beyond that period, you may be better off going with a new system to take advantage of the latest technology developments.

Laptops vs. Desktops

Once you have decided it is time to purchase a new system, there is then the question of whether to go with a notebook/laptop system or a desktop PC. Notebooks are not the luxury they once were and in the third quarter of this year, notebook shipments in the U.S. surpassed those of desktop systems. While both have their merits, the choice to go with a notebook/laptop