An Analysis of 100-baggers

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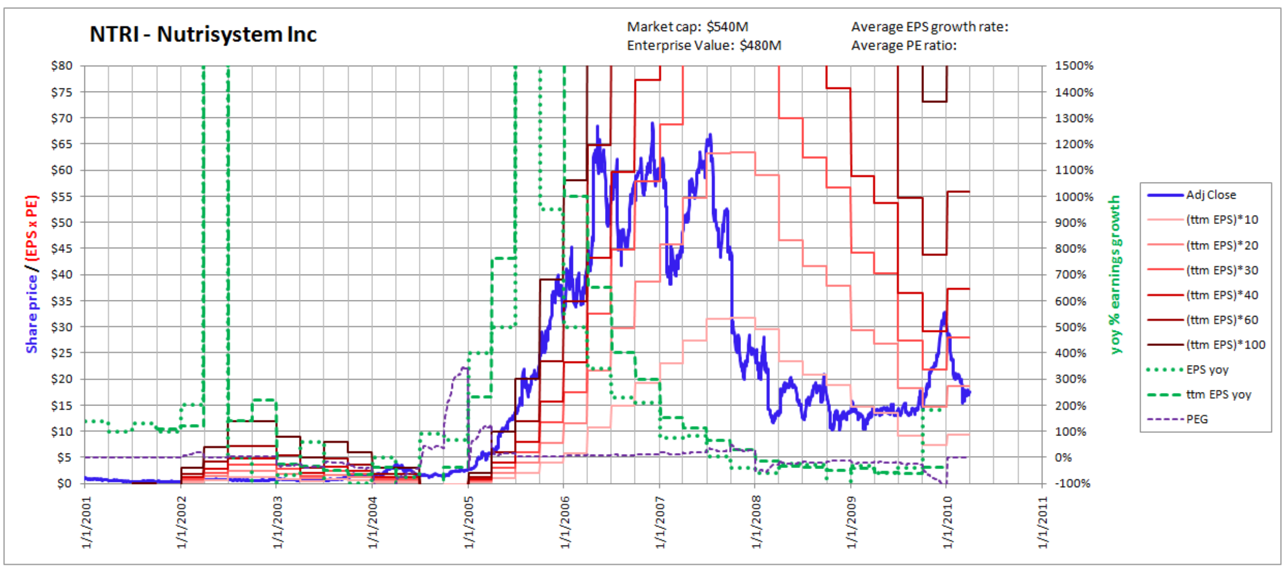
This is an analysis of past 100-bagger stocks. A 100-bagger is a stock which increases in value 100 fold (i.e., a stock which goes from $1 to $100). The term "bagger" was popularized by Peter Lynch, the former fund manager of Fidelity Magellan. He actually spoke most often of 10-baggers, however I figured that looking at 100-baggers would be more fun. By looking back I hoped to discover some common characteristics which would aid me in identifying potential multi-baggers of the future. Of course all my analysis is grounded in the fundamentals of companies. However once I find those stocks with the fundamentals I like, it was my hope that this exercise would help me to understand better why some stocks appear to go nowhere despite solid fundamentals while others make dizzying advances, how long those moves can last, when to enter and when to exit, etc.

I will be including lots of charts so I should describe their format. I make my own charts because I want to see certain things on them not normally present on stock charts (such as earnings lines, growth rates, and PEG ratios). Below is the chart of NTRI, a 100-bagger I will go over in more detail later.



In blue is the adjusted closing share price (adjusted for stock splits). The pink through dark red step function lines are the trailing twelve month EPS times various multiples (see the legend on the right). All EPS figures have also been adjusted for any stock splits. These lines, like the closing price, are read on the left-hand scale. The green step function lines are the year over year percentage change in quarterly EPS (green dotted line) and ttm EPS (green dashed line). These are read on the right-hand scale. In the charts I'll be showing of the 100-baggers I only plotted the green dashed line because it was too cluttered with the yoy quarterly EPS growth rates displayed. Note that the "steps" of both the red and green lines are three months wide, representing the figure for that quarter. Lastly, the dashed purple line is the PEG ratio (PE ratio divided by growth rate). Here I defined my PEG ratio as the ttm PE ratio divided by the yoy percentage change in ttm EPS. I defined it this way mostly for convenience, but the result is that it is more of a backwards looking PEG ratio as opposed to a forward looking PEG ratio. The purple line is also read on the right hand scale, with 50% being a PEG ratio of .5, 100% being a PEG ratio of 1, and so on.

I will start by sharing some of the conclusions I reached.

1) The most powerful stock moves tended to be during extended periods of growing earnings accompanied by an expansion of the PE ratio. And when I mention earnings, I mean earnings per share. For example take a stock which has ttm EPS of $1 and a ttm PE ratio of 10. The stock is trading at $10. Say over the next few years the stock grows ttm EPS to $2.5 and the market rewards the stock with a ttm PE ratio of 40. The stock is now trading at $100, resulting in a 10-bagger. The increase in stock price was far greater than the increase in earnings due to the PE expansion. Likewise, the most powerful moves to the downside were during periods of decreasing earnings accompanied by PE contraction.

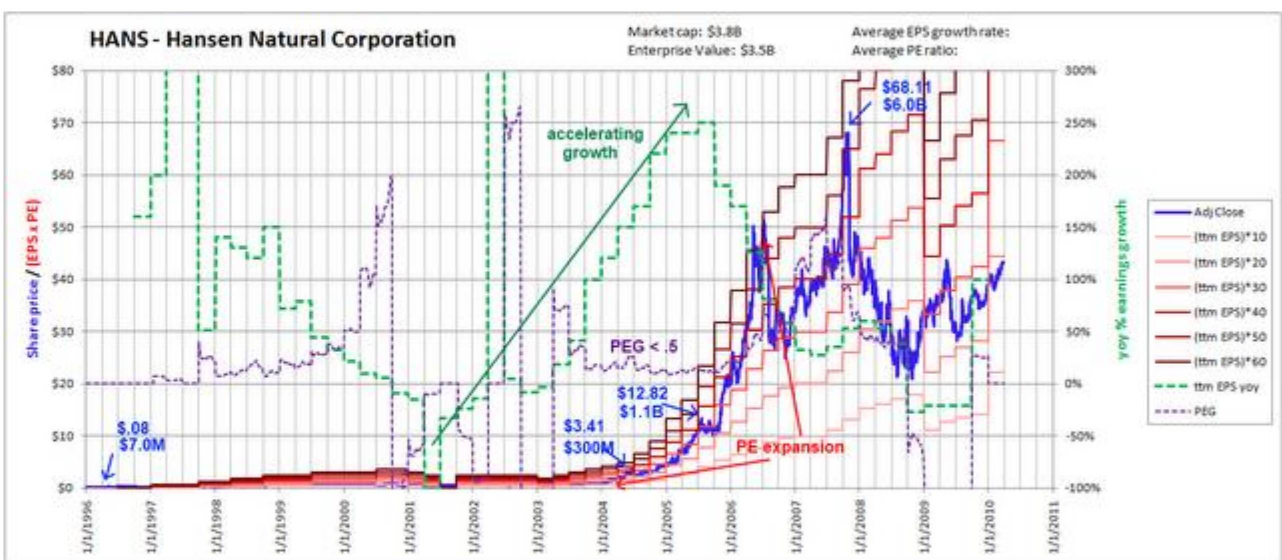
2) These periods of PE expansion often seem to coincide with periods of accelerating earnings growth. By that I mean a period when earnings growth ***rates*** are not just being maintained, but are increasing sequentially. For example consider the following two hypothetical stocks, "FLAT" and "ACC". Say that both FLAT and ACC had EPS in 2000 of $4, $1 in each quarter of 2000. FLAT has 2001 earnings of $1.25 in Q1 (25% growth rate yoy), $1.25 in Q2 (25% growth rate yoy), $1.25 in Q3 (25% growth rate yoy), and $1.25 in Q4 (25% growth rate yoy), for total earnings in 2001 of $5 per share (25% growth yoy). ACC has earnings in 2001 as follows: $1.10 in Q1 (10% growth rate yoy), $1.20 in Q2 (20% growth rate yoy), $1.30 in Q3 (30% growth rate yoy) and $1.40 in Q4 (40% growth rate yoy), for total earnings in 2001 of $5 per share (25% growth yoy). For the full year 2001 both FLAT and ACC grew earnings by 25% yoy. However ACC's yoy earnings growth rate was increasing quarter to quarter, while FLAT's growth rate was staying steady throughout the year. Now I'm not saying one is better than the other. In fact accelerating earnings growth rates are inherently less sustainable than steady growth rates. However in the past 100-baggers I looked at accelerating growth rates appeared more likely to coincide with PE expansion.

3) Some of the most attractive opportunities occur in beaten down, forgotten stocks which perhaps after years of losses are returning to profitability. To quote Peter Lynch, "The true contrarian is not the investor who takes the opposite side of a popular hot issue (i.e., shorting a stock that everyone else is buying). The true contrarian waits for things to cool down and buys stocks that nobody cares about, and especially those that make Wall Street yawn." The main thing to be aware of is that these forgotten stocks can remain so for years, so it is important to wait until you believe sustainable improvement in fundamentals is imminent. The moves in these forgotten stocks when the fundamentals start to turn can be powerful, resulting in 10-baggers in a short amount of time.

4) During such periods of rapid share price appreciation, stock prices can reach lofty PE ratios. This shouldn't necessarily deter one from continuing to hold the stock, as the uptrend can continue as long as the PEG ratio remains attractive (below 1, or preferably below .5). As long as the fundamentals and valuations remain attractive, a second 10 fold increase after an initial 10 fold increase would turn your 10-bagger into a 100-bagger.

It's nice to talk about theory, but it's far more interesting to see actual examples. In the charts which I'll be showing I plotted closing prices as far back as I could find, and earnings lines as far back as SEC filings went (which was usually around 1995). I'll note again that the closing prices are adjusted for splits. So when you see a stock price of say $0.10 in 1995, the stock never actually traded at 10 cents, that is just the split adjusted price (in a few cases where there were no stock splits the shares did actually trade at those penny levels however). Also, for expediency's sake, for figuring the market caps at various points in time which I annotated on the charts I simply multiplied current shares outstanding by the adjusted closing price at that point in time.

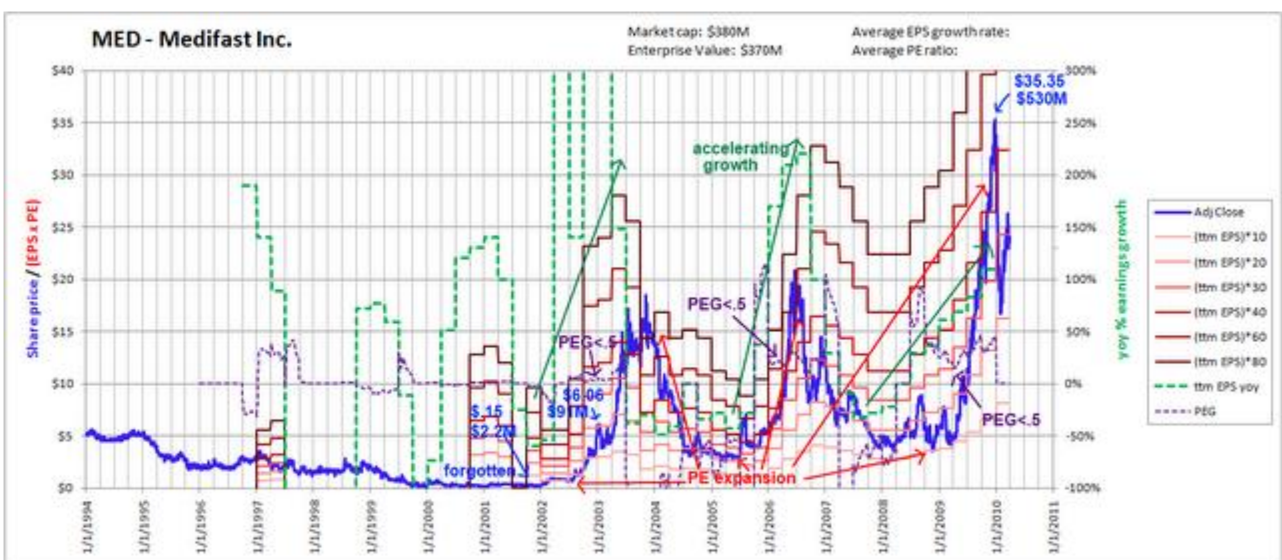
I'll start with one which I think is kind of a classic example of the conclusions I mentioned previously. The stock is HANS - Hansen Natural Corp. Over the course of about a decade the stock increased over 800 fold, or in Lynch terms an 800-bagger! Think about that for a second. $1,000 invested at the bottom would have turned into over $800,000 at the top. Now it is highly unlikely to buy at the exact bottom and sell at the exact top, and in some cases it may not even have been possible to put much money into these stocks at the bottom due to the very low volumes at the time. However it is a convenient way to compare relative movements and it is none-the-less fun to play "what-if." HANS big growth driver was Monster Energy which was initially sold in only a few markets. Popularity grew and distribution was expanded nationwide fueling huge growth. I actually discovered HANS fairly early on, but saw that the stock had already tripled in the previous few years. I didn't do the necessary due diligence and quickly dismissed it, and therefore missed out on the opportunity to own a stock which continued on to enjoy a further 20-fold increase from that point.



HANS wasn't really beaten down or forgotten, but it wasn't widely followed when it began it's meteoric rise. The prominent feature of this chart is the period of increasing earnings growth rates which was sustained from roughly 2001 through 2006 as indicated by the green arrow. It began in 2001 with earnings growth rates simply becoming less negative (from worse than -100% yoy in Q2 to -30% yoy in Q3 to -20% yoy in Q4). In 2002 the earnings growth rates continued to climb to only slightly negative, 0% (no change yoy) or slightly positive. In 2003, yoy growth rates climbed to 20%, 40%, and 100% in the last three quarters, respectively. In 2004 growth really started to ramp up with yoy increases of 120%, 150%, 170% and 220% in Q1 through Q4 respectively. The trend continued with yoy growth rates above 200% for most quarters of 2005.

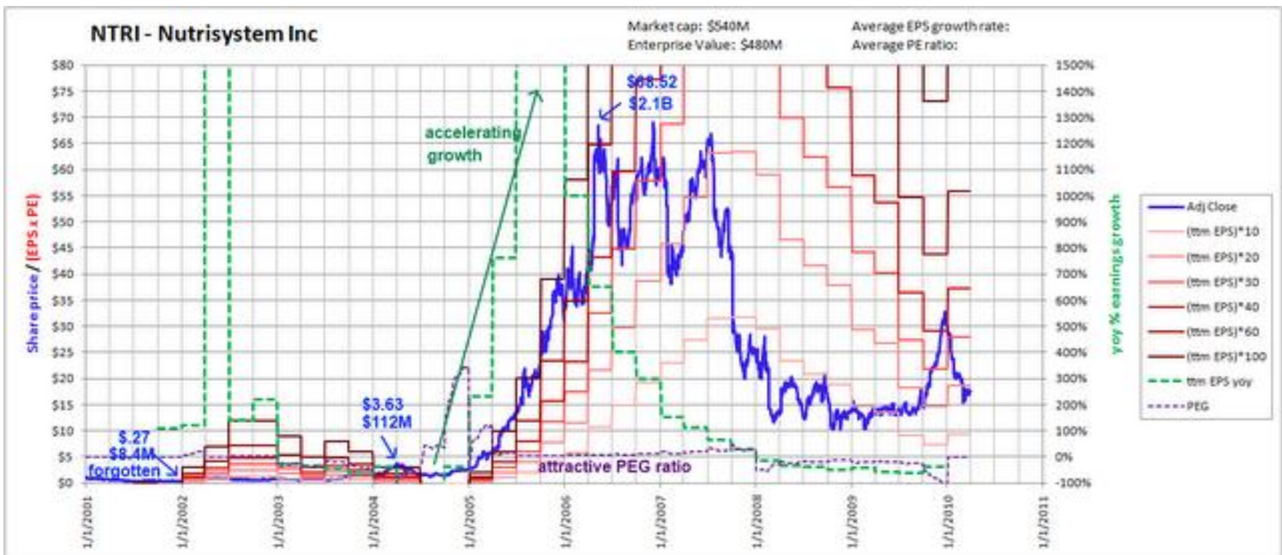
In 2001 HANS had ttm EPS of around $0.04 (split adjusted), and was trading at around a 10 PE (as represented by the pink earnings line) or a share price around $.40. It is kind of hard to see because the earnings lines are so compressed and are covering the closing price. In 2006 HANS had ttm EPS of around $1.00 and had reached a PE of around 50 (represented by the darker red earnings line) resulting in a share price in the $50s. While EPS had increased 25 fold over that time frame (from $.04 to $1.00), share price had increased 125 fold (from $.40 to $50) due to the PE expansion. This PE expansion pointed out by the red arrows coincides with the increasing growth rates indicated by the green arrow. Also note that during most of this period of PE expansion the PEG ratio remained very attractive as indicated by the purple dashed line and note. So even as HANS PE ratio climbed from 10 to 20 to 30 to 40 to 50, the movement was sustainable because growth rates were increasing as well so the PEG ratio remained low.

I spent awhile on HANS since it was sort of a "textbook" example of a lot of the key features I wanted to point out. On the following examples I'll move a little quicker. The next example is MED - Medifast Inc. I'm sure you're familiar with this maker of weight management products. MED was a 230-bagger over the course of a decade.



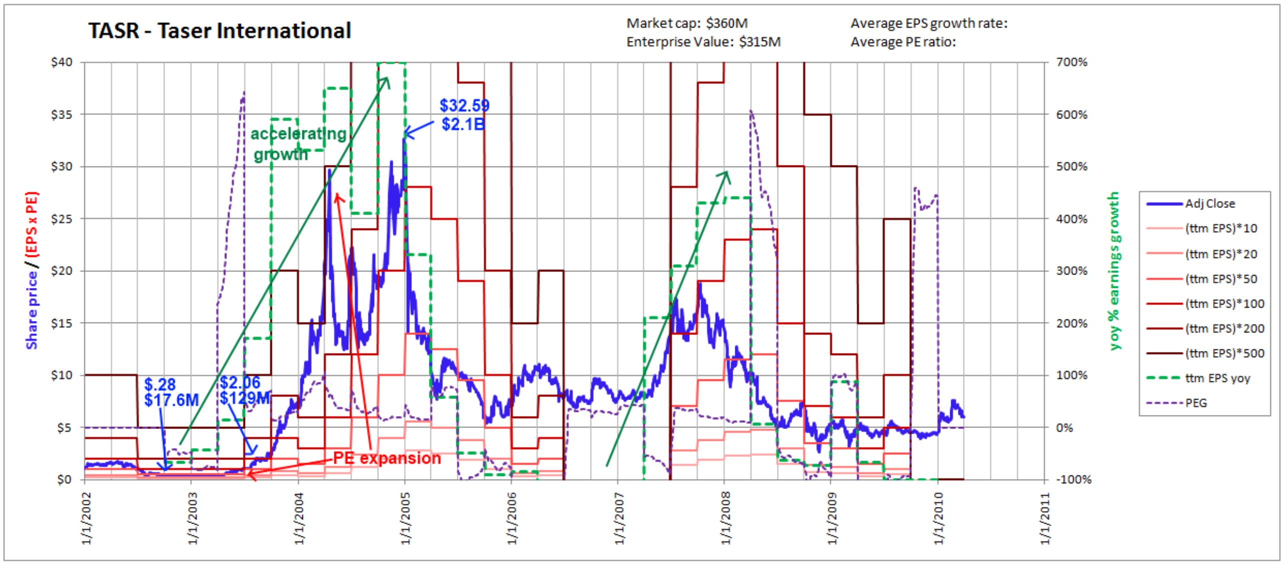
What is especially interesting about MED is that it had three parabolic rises in that time span - in 2003, 2006 and 2009. In each instance notice the increasing earnings growth rate periods pointed out by the green arrows and green dashed line, the PE expansions pointed out by the red arrows and earnings lines, and the attractive PEG ratios noted in purple which sustained the parabolic rises.

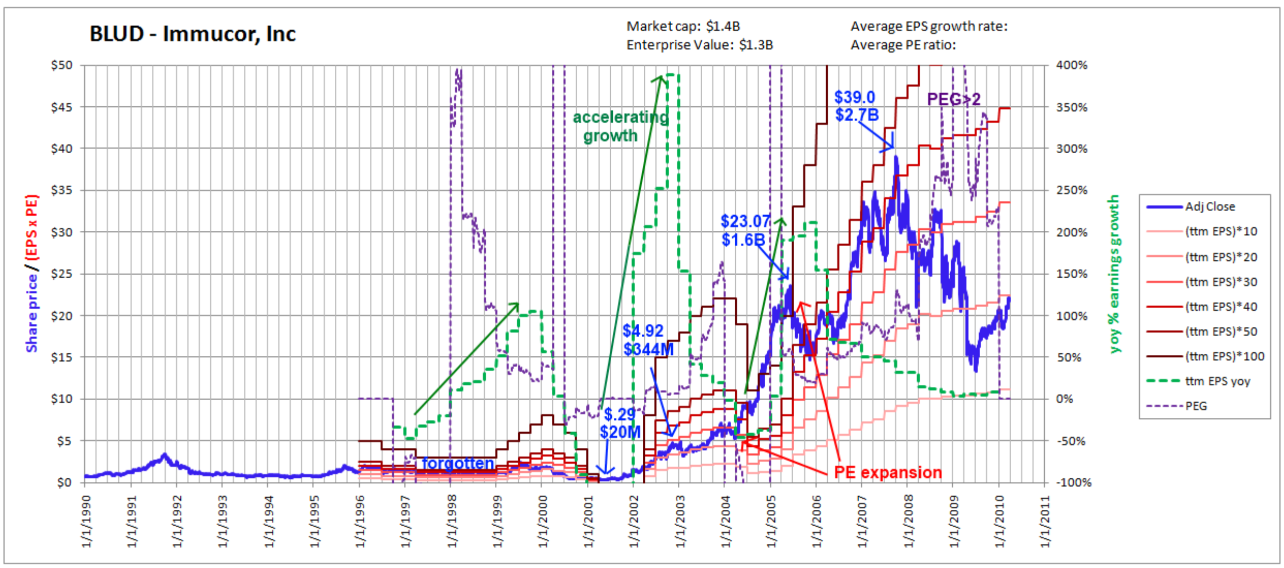
My next example is another nutritional product company and another 200+ bagger, NTRI - Nutrisystem. I'm sure you've seen their commercials so I'll get right to the chart.

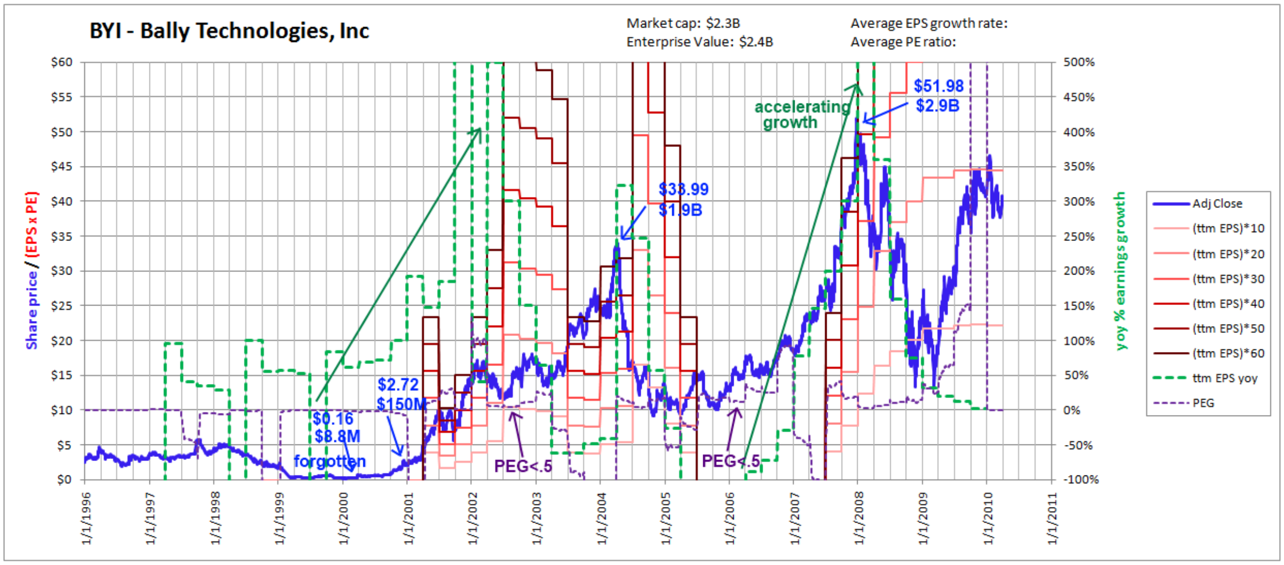


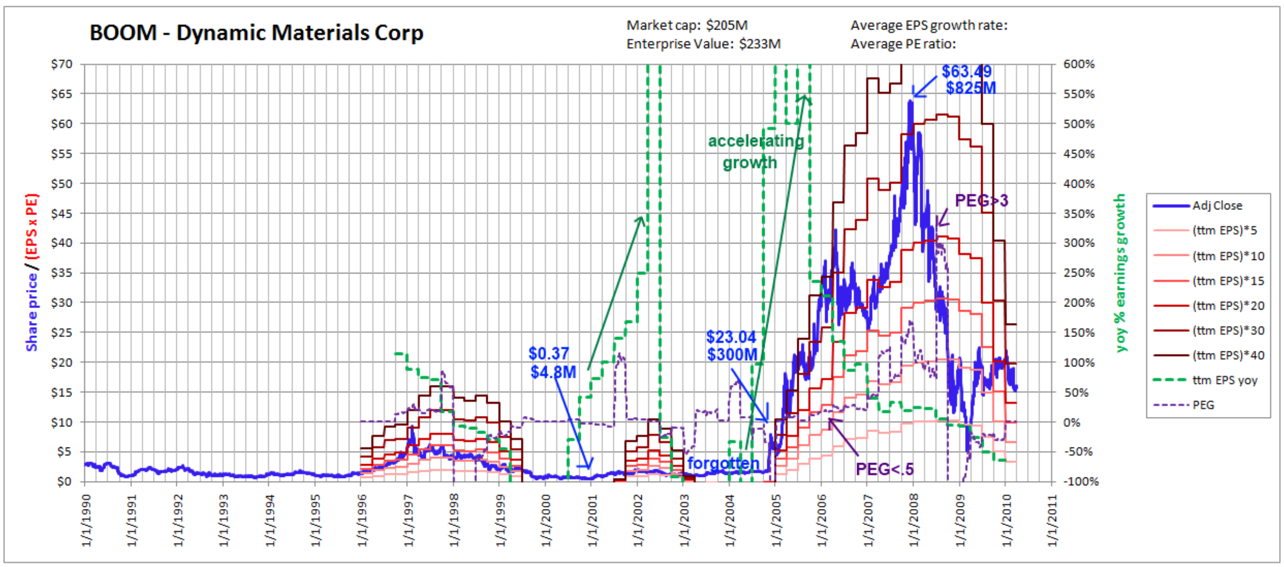
Again the prominent feature is the period of increasing growth rates indicated in green. In NTRI's case there doesn't appear to be as much PE expansion, it consistently traded at a high PE ratio. However the yoy growth rates were so high (note the limits on the scale on the right) that the PEG ratio remained low throughout the rise (purple note).

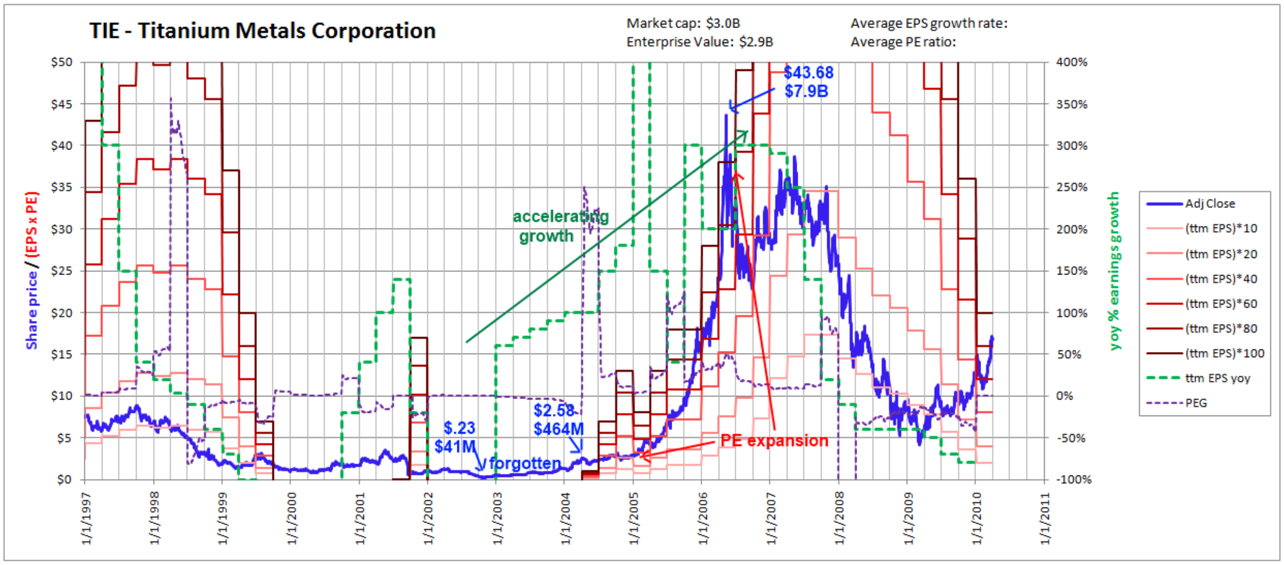
Now for a few more examples featuring the effect of the increasing earnings growth rate trend. TASR (Taser International, whose products are probably familiar) and BLUD (Immucor, an in vitro diagnostics company), were both 100-baggers. BYI (Bally Technologies, a gaming equipment company) was a 300-bagger. A couple of companies in the basic materials sector, BOOM (Dynamic Materials) and TIE (Titanium Metals Corp) were over 100-baggers. As was a shipping company, EXM (Excel Maritime Carriers). The effect was even apparent in .com companies, be it YHOO (Yahoo, which was a 100-bagger in a stunningly short 3 years) or SOHU (Sohu.com). In each of these examples the increasing growth rate periods are noted by green arrows. It may not always be a perfect ladder of sequentially increasing growth rates, but the trend is apparent.


TASR - Taser International
Market cap: $360M
Enterprise Value: $315M
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$32.59
$2.1B
$.28
$17.6M
$2.06
$129M
PE expansion
Adj Close
(ttm EPS)*10
(ttm EPS)*20
(ttm EPS)*50
(ttm EPS)*100
(ttm EPS)*200
(ttm EPS)*500
ttm EPS yoy
PEG

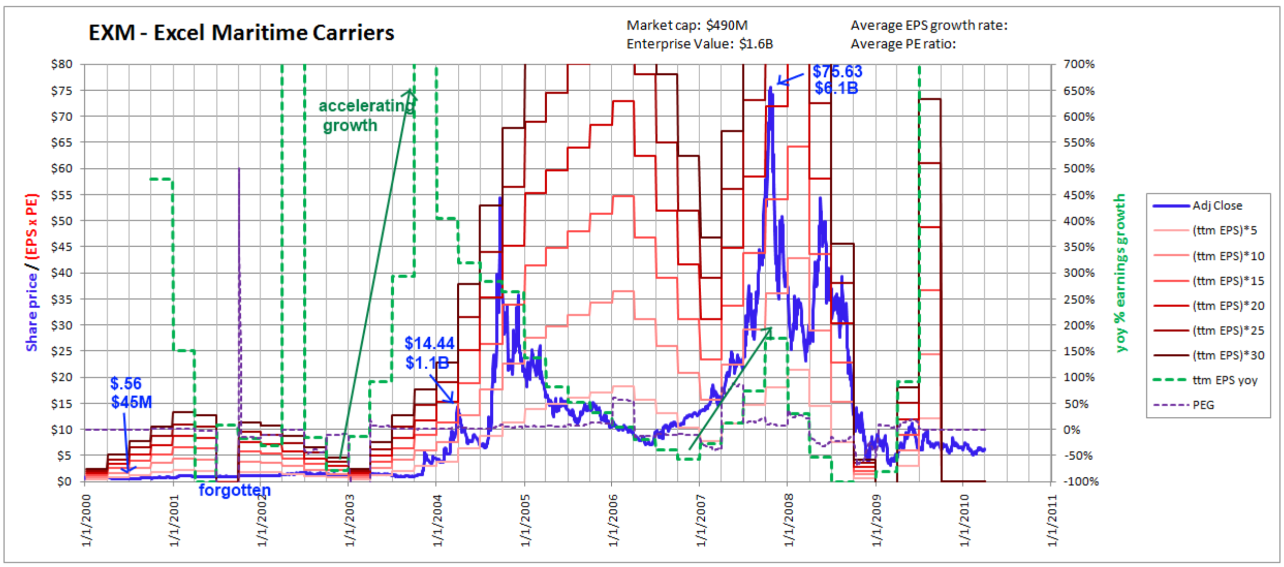

BLUD - Immucor, Inc
Market cap: $1.4B
Enterprise Value: $1.3B
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$39.0
$2.7B
PEG>2
$23.07
$1.6B
$4.92
$344M
$.29
$20M
forgotten
PE expansion
Adj Close
(ttm EPS)*10
(ttm EPS)*20
(ttm EPS)*30
(ttm EPS)*40
(ttm EPS)*50
(ttm EPS)*100
ttm EPS yoy
PEG


BYI - Bally Technologies, Inc
Market cap: $2.3B
Enterprise Value: $2.4B
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$51.98
$2.9B
$33.99
$1.9B
$2.72
$150M
$0.16
$8.8M
forgotten
PEG<.5
PEG<.5
Adj Close
(ttm EPS)*10
(ttm EPS)*20
(ttm EPS)*30
(ttm EPS)*40
(ttm EPS)*50
(ttm EPS)*60
ttm EPS yoy
PEG


BOOM - Dynamic Materials Corp
Market cap: $205M
Enterprise Value: $233M
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$63.49
$825M
PEG>3
$0.37
$4.8M
$23.04
$300M
forgotten
PEG<.5
Adj Close
(ttm EPS)*5
(ttm EPS)*10
(ttm EPS)*15
(ttm EPS)*20
(ttm EPS)*30
(ttm EPS)*40
ttm EPS yoy
PEG



TIE - Titanium Metals Corporation
Market cap: $3.0B
Enterprise Value: $2.9B
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$43.68
$7.9B
$.23
$41M
forgotten
$2.58
$464M
PE expansion
Adj Close
(ttm EPS)*10
(ttm EPS)*20
(ttm EPS)*40
(ttm EPS)*60
(ttm EPS)*80
(ttm EPS)*100
ttm EPS yoy
PEG



EXM - Excel Maritime Carriers
Market cap: $490M
Enterprise Value: $1.6B
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
$.56
$45M
forgotten
$14.44
$1.1B
$75.63
$6.1B
Adj Close
(ttm EPS)*5
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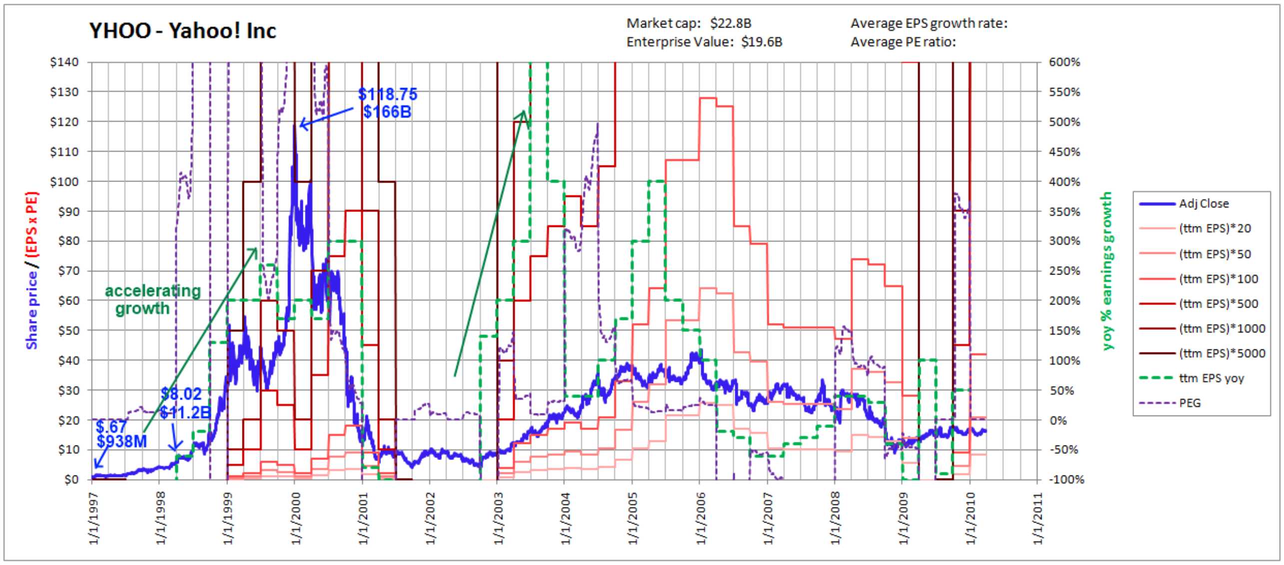
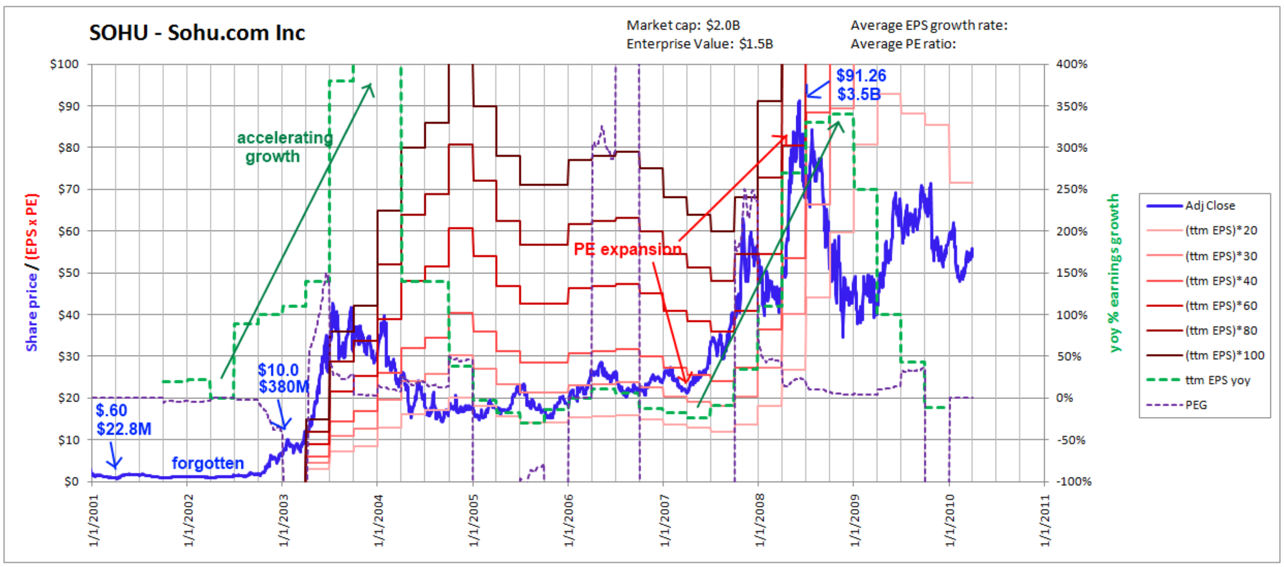
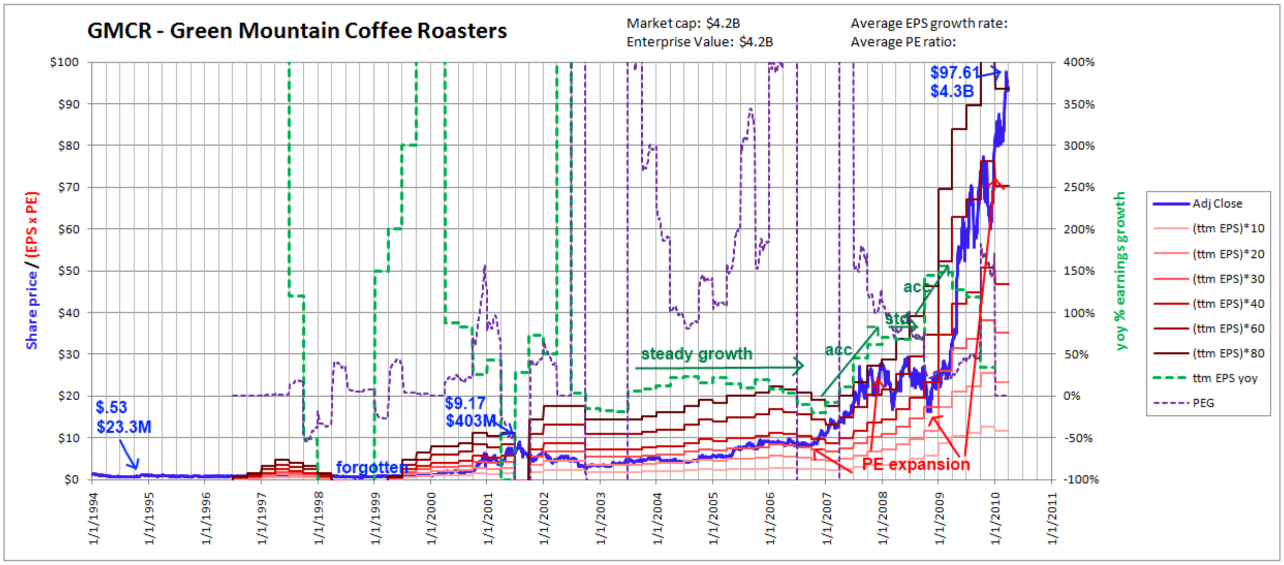
(ttm EPS)*15
(ttm EPS)*20
(ttm EPS)*25
(ttm EPS)*30
ttm EPS yoy
PEG



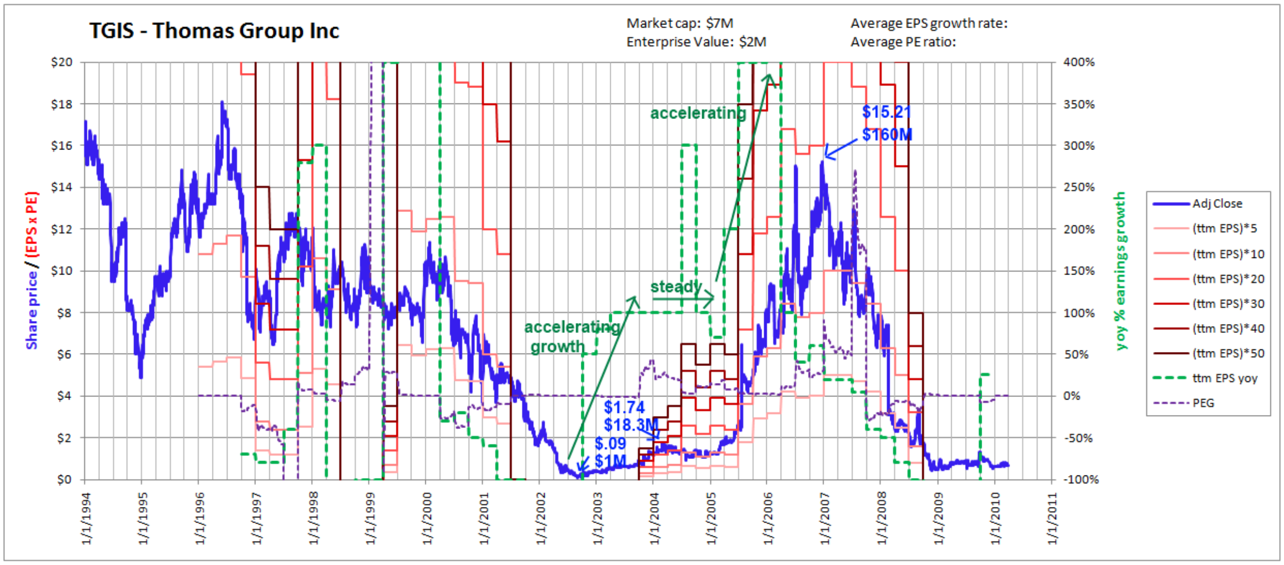


The next few charts I am going to show are examples of 100-baggers which went through both periods of increasing earnings growth rates and periods of steady growth rates. The first is GMCR (Green Mountain Coffee Roasters, which markets coffee and tea products to retailers and distributors). GMCR went through a period of steady earnings growth from about mid 2003 through mid 2006, followed by a period of increasing growth rates in 2007, then three quarters of steady growth rates in 2008 and then a couple more quarters of increased growth rates in 2009.



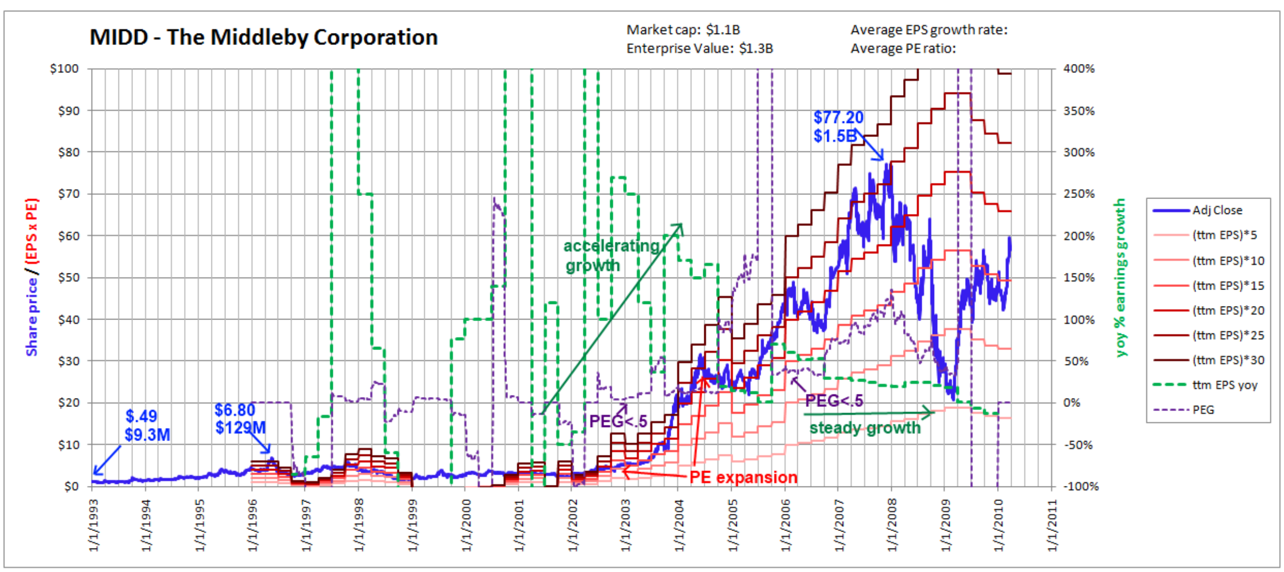
From mid 2003 through mid 2006 yoy growth rates were fairly steady at around 10-25%. GMCR traded around 20 times ttm EPS until mid 2005, and then traded around 30 times ttm EPS until late 2006. In 2007 GMCR had a period of increasing yoy growth rates. During this time GMCR's ttm PE expanded, reaching as high as 80. Growth rates then remained steady at around 70% in 2008 during which time the stock moved in a sideways channel, resulting in the PE ratio decreasing. In 2009 growth rates increased again to around 150% and PE expansion occurred again. This example illustrated the effect of periods of increasing growth rates correlating to rapid PE expansion and periods of steady growth rates correlating to moderate PE expansion or periods of consolidation.

Next is TGIS (Thomas Group Inc). TGIS is a small/micro cap company which at its peak only had a $160 million market cap. Quoting from its business description, TGIS is a professional services company that executes and implements process improvements and culture change management operations strategies. That hardly screams high growth industry or highly scalable business model. Yet TGIS was a greater than 100-bagger in the span of roughly 4 years.



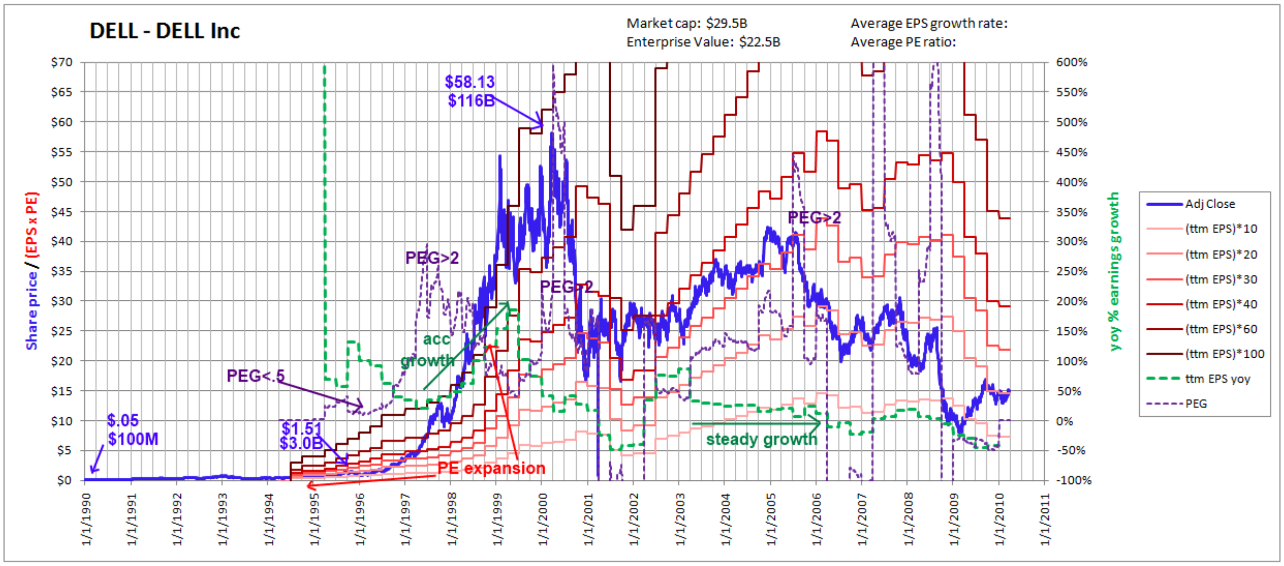
TGIS went through a period of increasing growth rates followed by a period of steady growth rates followed by a resumption of increasing growth rates. During the period of steady growth rates TGIS shares moved sideways even though steady 100% yoy earnings growth was being maintained. When the growth rate increases resumed, so did the share price appreciation.

Next up is MIDD (The Middleby Corporation, a seller of commercial food service equipment). MIDD went through a period of increasing growth rates followed by a period of steady growth rates.



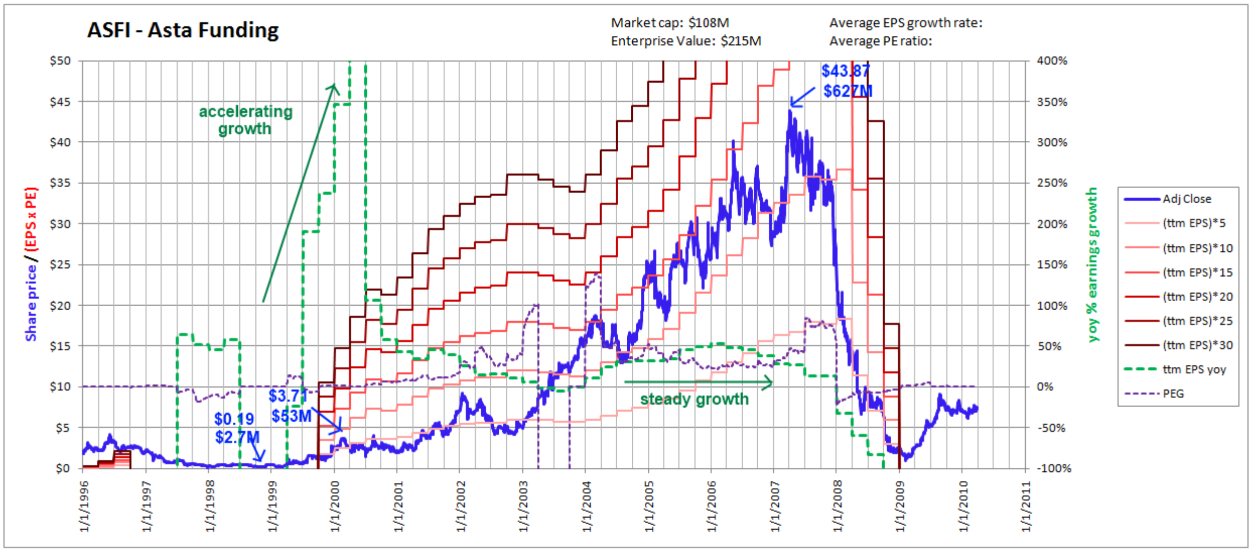
Although it was very choppy, the trend from early 2001 through early 2004 was for generally increasing growth rates. During this time PE ratio expansion occurred from roughly 10x ttm EPS to roughly 30x ttm EPS. From late 2006 through 2009 earnings growth rates were pretty steady at around 25%. MIDD's ttm PE ratio was range bound between 20 and 25 much of this time.

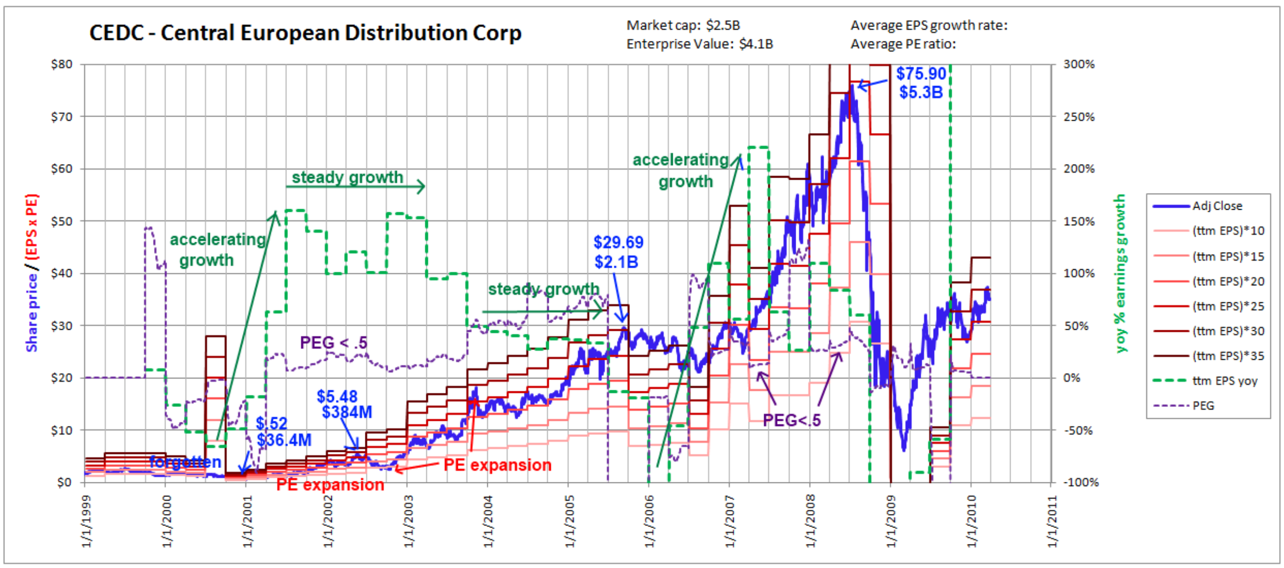
Another example is DELL, a very rare 1000-bagger.

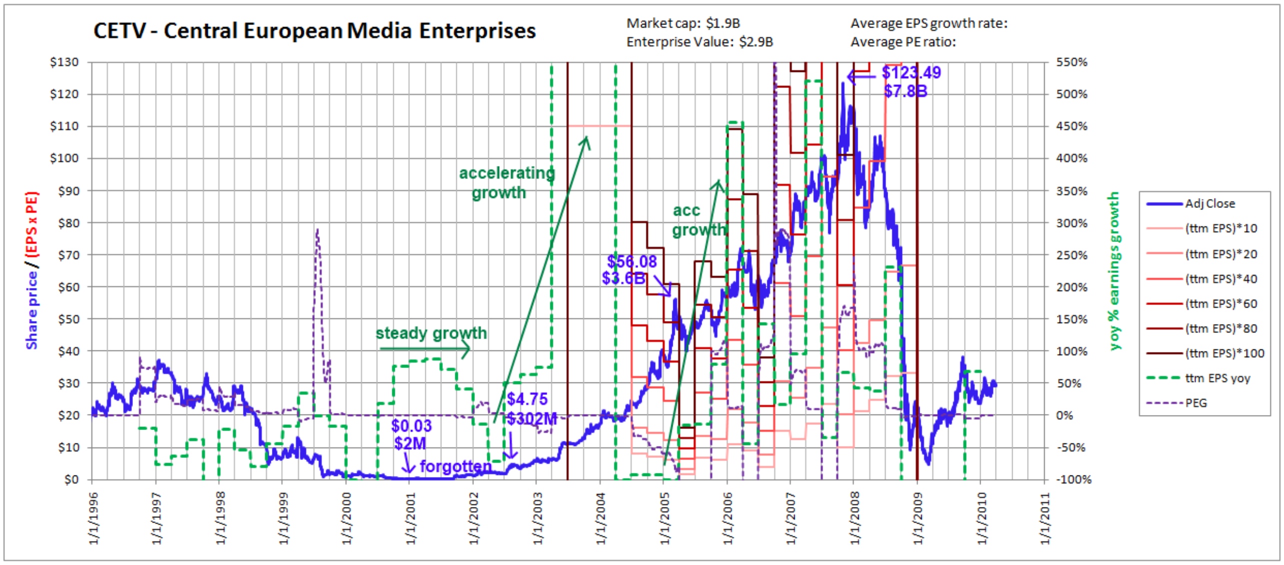


DELL went through a period of increasing growth rates from 1997 through 1999 which coincided with an expansion of the ttm PE ratio. Later in its life DELL went through a period of steady growth rates between 2003 and 2006 where yoy growth rates remained around 25%. DELL's ttm PE ratio hovered between 30 and 40 much of this time.

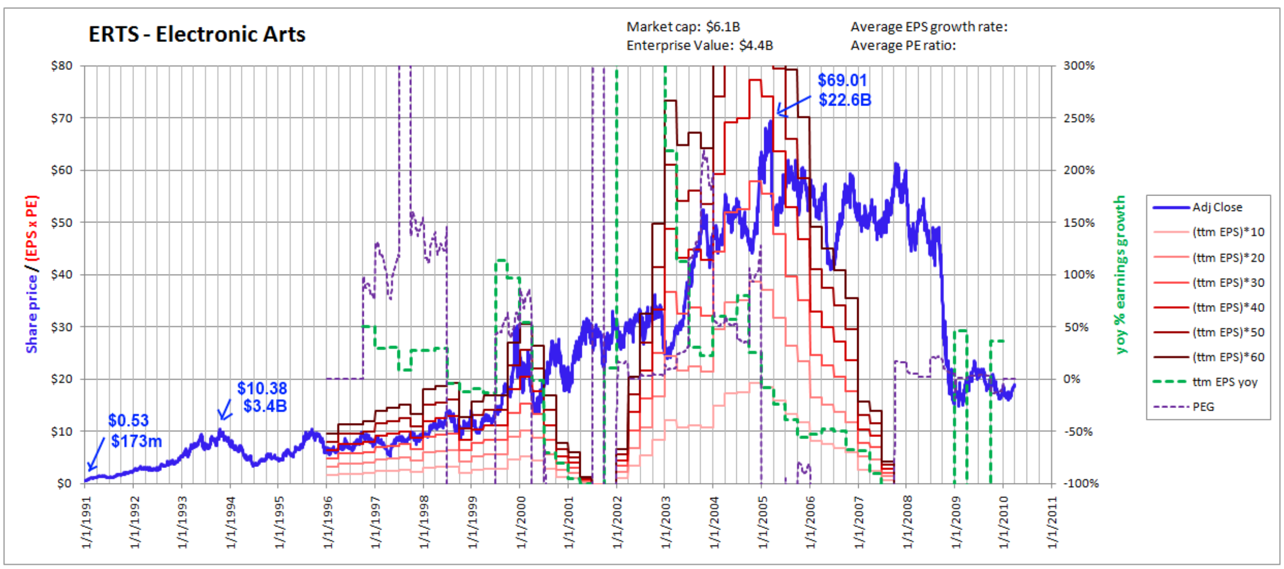
Here are a few more examples of 100-baggers which went through both periods of increasing growth rates and steady growth rates. ASFI (Asta Funding, a servicer of distressed consumer receivables), CEDC (Central European Distribution Corp, a distributor of alcoholic beverages) and CETV (Central European Media Enterprises, a TV broadcaster) which is the biggest gainer I have been able to find thus far, a staggering 4000+ bagger!


ASFI - Asta Funding
Market cap: $108M
Enterprise Value: $215M
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
accelerating growth
steady growth
$43.87
$627M
$3.71
$53M
$0.19
$2.7M
Adj Close
(ttm EPS)*5
(ttm EPS)*10
(ttm EPS)*15
(ttm EPS)*20
(ttm EPS)*25
(ttm EPS)*30
ttm EPS yoy
PEG


CEDC - Central European Distribution Corp
Market cap: $2.5B
Enterprise Value: $4.1B
Average EPS growth rate:
Average PE ratio:
Share price / (EPS x PE)
yoy % earnings growth
steady growth
accelerating growth
accelerating growth
steady growth
PEG < .5
PEG<.5
$75.90
$5.3B
$29.69
$2.1B
$5.48
$384M
$.52
$36.4M
forgotten
PE expansion
PE expansion
Adj Close
(ttm EPS)*10
(ttm EPS)*15
(ttm EPS)*20
(ttm EPS)*25
(ttm EPS)*30
(ttm EPS)*35
ttm EPS yoy
PEG



Finally one last 100-bagger where the trends weren't immediately apparent to me. ERTS (Electronic Arts, a video game publisher).



I would say that from 2001-2004 was the period of increasing growth rates, but it was very choppy. Video game publishers can be tricky because they almost share characteristics of cyclicals around the console transitions. They go through periods where they invest heavily in R&D developing engines for the next-gen consoles but the installed base is not very large yet so they are not profitable, as is apparent by the dip in earnings in 2001.

To summarize, from my analysis it appears that a key ingredient for igniting parabolic rises in share price is a sustained period of increasing growth rates. This period of increasing growth rates, as opposed to merely steady growth rates, often drives the market to bid up stocks to higher PE ratios. This PE expansion causes the share price appreciation to outpace the increase in earnings. The parabolic rise can continue even as the stock reaches higher and higher PE ratios as long as the increase in growth rate keeps pace and the PEG ratio remains low. Knowing how much further an uptrend can go could mean the difference between a 10-bagger and 100-bagger. Often times these parabolic increases start after a period when the stock has been forgotten or ignored and is embarking on a return to profitability.

I included every 100-bagger I looked at on this page. I didn't pick and choose which ones I showed. I could have done more, there are definitely more 100-baggers out there. However each one is fairly time consuming because I have to go through the 10Qs and 10Ks all the way back to 1995 and put together my spreadsheets and charts. I felt that the group I had was pretty diverse across industries, market caps, geographies, and time periods. I thought going into this exercise that 100 baggers might mainly be limited to certain sectors or occur mainly during certain bubble times, such as tech stocks or the .dot com bubble. Certainly there were a fair share of those. However there were also 100 baggers I found in unexpected sectors. I thought most 100 baggers may be "story" stocks but there were also 100 baggers in "boring" companies. Beginning with small market caps or depressed share prices was practically universal however. Overall I was encouraged that there are multi-bagger opportunities (if not necessarily 100 baggers) out there to find still in all kinds of sectors.