

## The Power of Growth—The Magic of Compound Interest

"Compound interest is the eighth wonder of the world."

—ALBERT EINSTEIN

SINCE MY PHILOSOPHY is that earnings growth is what drives stock price over time, it seems that the simple solution would be to find companies with high earnings growth, take a deep breath, and then hang on for the ride. While that's true, investing in high-growth enterprises is even better than that due to the way compound interest works. Understanding the magic of compound interest and the power of earnings is critical to appreciating why growth investing has such huge potential rewards.

Compound interest, high earnings growth rates, and time create a potent combination that leads to spectacular returns. Even slight differences in short-term returns can produce dramatic results over a meaningful time period when aided by compounding.

To understand the magic of compound interest, let me tell you another story. In 1626, Dutchman Peter Minuit purchased the entire island of Manhattan for \$24 worth of trinkets from the Wappinger Indians. In other words, for what it would cost to order a bagel and café latte at a midtown hotel today, Monsieur Minuit owned the *entire* Big Apple.

While there are many outside of Gotham who would look at neither as a bargain, my point is to demonstrate the power of compound interest. Albert Einstein called compound interest the eighth wonder of the world, and with the help of the ninth wonder of the world, the HP 12C, we can calculate whether Peter Minuit got a good deal.

### WHERE DO BIG COMPANIES COME FROM?

COMPANY	YEAR OF IPO	MARKET CAP (MILLIONS)		STOCK CAGR	EPS GROWTH
		IPO	TODAY		
UnitedHealth Group	1984	\$29	\$79,002	33%	33%
Apple	1980	\$810	\$59,662	12%	18%
ADP	1961	\$10	\$26,737	15%	15%
Gilead Sciences	1992	\$208	\$24,173	27%	30%
Nike	1980	\$418	\$22,660	15%	20%
Boston Scientific	1992	\$1,692	\$20,274	13%	15%
XTO Energy	1993	\$192	\$15,964	35%	38%
Electronic Arts	1989	\$59	\$15,834	34%	30%
Biogen	1991	\$109	\$15,030	21%	21%
Paychex	1983	\$61	\$14,732	27%	23%
Coach	2000	\$884	\$12,775	70%	50%
Express Scripts	1992	\$82	\$12,296	44%	27%
VeriSign	1998	\$437	\$5,633	20%	23%
Dollar Tree Stores	1995	\$294	\$2,571	22%	27%

Source: FactSet, ThinkEquity Partners.

Obviously, the key variable to determine the answer is the interest rate that we apply to the \$24. In other words, what could we have earned in an alternative investment?

The difference between a 5% return and a 10% return isn't a simple doubling but a compounding that becomes staggering over time. If the \$24 had been invested at 5% interest over the past 380 years, it would have grown to \$2.6 billion today, implying a good price given that Rockefeller Center alone sold for \$1.85 billion in 2000.

At a 10% return, however, the \$24 doesn't just double the 5% return to \$5.4 billion. With compounding it magnifies it to \$129 quadrillion, 45 million times greater!

Purchase price for Manhattan Island in 1626	\$24
Value today if invested at 5% annual yield	\$2.7 billion
Value today if invested at 7.5% annual yield	\$20.7 trillion
Value today if invested at 10% annual yield	\$128.7 quadrillion
Rockefeller Center sale price in 2000	\$1.9 billion
U.S. market capitalization	\$15.5 trillion

As you're going to hear once or twice more, the foundation of my investment philosophy is that over time, share prices are nearly 100% correlated with earnings. Hence, my objective is to identify companies whose earnings grow at a high and sustainable rate and benefit from the magic of compound interest.

In the world of investing, few stocks have accomplished the returns of Peter Minuit's land purchase, yet consider that Microsoft went from a \$500 million market cap company at the time of its IPO to nearly \$300 billion today by increasing its earnings at an approximately 40% compound annual growth rate over the past 20 years.

The trick, of course, is that it is almost impossible to grow at a rate that high for so long a period, as the laws of compounding cause growth to diminish with size. Only six companies managed to grow their earn-

ings in excess of 20% each year during the past 10 years—out of a universe of more than 12,000 companies!

20/10 CLUB											
COMPANY	EPS GROWTH										
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Apollo Group	66%	61%	51%	33%	28%	30%	40%	55%	45%	25%	
Bed Bath & Beyond	30%	37%	32%	31%	32%	32%	26%	37%	28%	29%	
Capital One	32%	22%	21%	41%	31%	30%	30%	35%	25%	27%	
NVR	95%	63%	31%	126%	81%	70%	63%	44%	34%	37%	
Ryland Group	148%	59%	107%	54%	37%	57%	44%	37%	39%	42%	
Starbucks	67%	20%	33%	25%	30%	29%	37%	20%	22%	42%	

Source: Company SEC filings, ThinkEquity Partners.

## → RULE OF 72

A useful tool for comprehending the impact of compound interest and the doubling effect, but something they don't teach at Harvard Business School, is the Rule of 72. While in my view the HP 12C is magic for math tricks, all you need for the Rule of 72 is simple arithmetic. The rule says that if you divide an interest rate into 72, it will tell you how many years it will take to double your investment. At 9% interest, a dollar would double in 8 years ( $72 \div 9 = 8$ ). At 12% interest, a dollar will double in 6 years. Another way to look at it is that a company growing its earnings

at 15% a year, with a constant P/E, will double its share price in roughly 5 years; a company growing its earnings at 25% per year with a constant P/E will double its value in roughly 3 years.

RULE OF 72		
INTEREST RATE	NUMBER OF YEARS TO DOUBLE	VALUE OF \$1 IN 30 YEARS
3%	24	\$2.43
6%	12	\$5.74
9%	8	\$13.27
12%	6	\$29.96
15%	5	\$66.21
25%	3	\$807.79

To illustrate the dramatic impact compounding has over time, if you earned 3% on your funds for 30 years (a decent after-tax bond return) versus 12% (the average return of small-cap stock over the past 80 years), you would have more than 12 times more money with a 12% return in 30 years.

In other words, if we invest in a company that grows its earnings at 25% for 10 years, and we have a constant P/E multiple, the stock price will go up nearly tenfold.

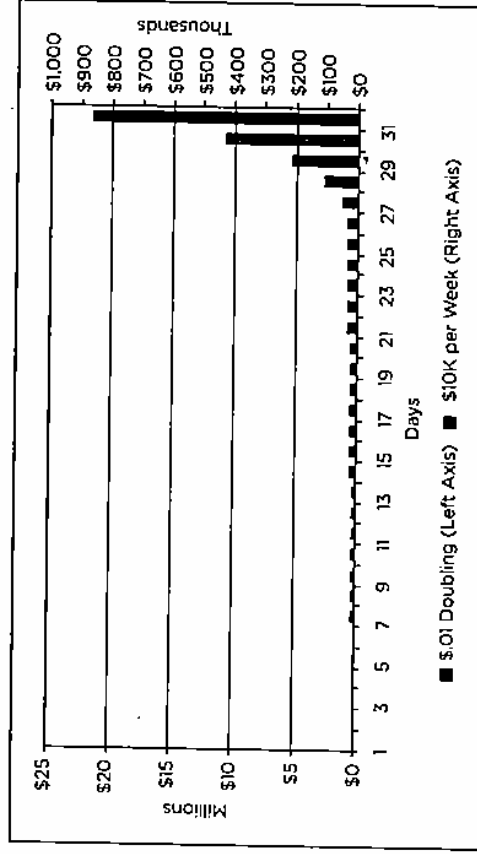
## → ONE CENT DOUBLING EVERY DAY OR \$10,000 PER WEEK?

To illustrate the power of the doubling effect, suppose you were offered a job as a consultant for a month and you had your choice of being paid \$10,000 per week or a penny the first day, and having it double every day for the remainder of the month. Easy choice, right?

At \$10,000 per week, you would make \$40,000 for the month. On the other hand, making a penny the first day, two cents the second, four cents the third, eight cents the fourth, and so on, you actually end up making more than \$20 million by the 31st day! That is the power of growth!

### The Doubling Effect:

Would you take \$.01 doubling each day or \$10,000 per week?



Source: ThinkEquity Partners.

→ **MATH OF NEGATIVE RETURNS—  
THE OTHER SIDE OF THE SWORD**

"There are old pilots and there are bold pilots, but there aren't many old-bold pilots."  
— UNKNOWN

Just as compounding geometrically increases the value of positive returns, it also exacerbates the impact of negative returns. To illustrate this point, consider two imaginary portfolios.

Fund 1 is the New Century High Octane Fund (NCHO). Its average P/E is N/M (not meaningful), and annual turnover of the portfolio is 2,000%. Figuring out the top 10 holdings is difficult because this changes so often, but a reasonable proxy is to look at the stocks that are making new daily highs.

Fund 2, the American Eagle Stalwart Fund (AES), invests in leading companies within their industries that have growth rates of at least 20%, good margins, and visibility of both revenues and profits.

Both portfolios start with \$100K at the beginning of year 1. NCHO increases 100% in the first year, and then falls 30% in the second year. AES increases 20% in each year.

Question: Which fund had more money at the end of year 2?

FUND	START	YEAR 1		YEAR 2	
		PORTFOLIO VALUE	RETURN	PORTFOLIO VALUE	RETURN
NCHO	\$100,000	\$200,000	100%	\$140,000	-30%
AES	\$100,000	\$120,000	20%	\$144,000	20%

Answer: the American Eagle Stalwart Fund (\$144,000 versus \$140,000).

Part of the secret of successful investing is the compounding of returns over a period of time. Sadly, negative returns drastically undermine the magic of compounding. For example, if you are down 50%, to get back to even you don't need a simple 50% rebound, but a 100% gain.

Think for a second of the return you would need to get back to even if you bought shares in WorldCom at \$43 in March 2000 and held it through the end of 2002, when the share price was only 12 cents! The return to get back to even is 35,733%! Investors who purchased shares in Lucent at \$50 in March 2000 and are still holding them today at \$2.66 currently require a return of 1,780% to get back to even.

CUTTING YOUR LOSSES EARLY— RETURN NEEDED TO BREAK EVEN	
DOWN	TO BREAK EVEN
-10%	11%
-20%	25%
-30%	43%
-40%	67%
-50%	100%
-60%	150%
-70%	233%
-80%	400%
-90%	900%

The cold, hard fact of investing in growth stocks is that volatility is the norm and living with short-term negative returns is part of the game. The way to win long-term is to focus on fundamentals with earnings growth and price performance running in tandem over time, and, when wrong, to be intellectually honest and admit it. The five baggers and the ten baggers (terms coined by Peter Lynch to reflect investments that pay off fivefold and tenfold, respectively) more than offset the ~10% and ~20% mistakes, but the ~90% nuclear bombs are next to impossible to overcome.

### → THE PIONEERS GET ALL THE ARROWS ... BUT THE SURVIVORS GET ALL THE LAND

"Trust, but verify."

—RONALD REAGAN

Investing in emerging companies requires a strong stomach and a lot of self-confidence. Often, conventional wisdom is against the company, and the "smart guys" think the stock is ridiculous. (Side note: for some reason, on Wall Street cynics are thought to be brilliant.)

Here are some typical comments you hear: "Nobody has ever done that before." "It's too risky." "If it's such a good idea, why doesn't [the gorilla in the industry] do it?" "The stock is too expensive. The P/E is three times the market." "Competition is going to wipe them out." "It's a fad." "The stock has doubled in the past six months—trees don't grow to the sky."

When I was aggressively recommending that investors buy Starbucks shares when its market cap was well below \$1 billion, I was ridiculed for being a fool: "No barriers to entry." "Nobody is going to pay more than \$.50 for a cup of coffee in NYC." "Wait until Maxwell House gets into the business!"

Furthermore, when an emerging star stumbles, and most of them will, the chorus will be unmerciful. The "I told you so's" will be out in full force, and true believers will be as quiet as Peter in Jerusalem.

The pitfalls are many, the risks are real, but the rewards are staggering. How do you distinguish between the Starbucks and the Krispy Kremes? The Dells and the Gateways? The Apollos and the Edison Schools?

### → THE RISK OF CONSENSUS

Zebras have the same problem as institutional portfolio managers like myself.

First, both have quite specific, often difficult-to-obtain goals: for portfolio managers, above-average performance; for zebras, fresh grass.

Second, both dislike risk. Portfolio managers can get fired; zebras can get eaten by lions.

Third, both move in herds. They look alike, think alike, and stick close together.

If you are a zebra and live in a herd, your key decision is where to stand in relation to the rest of the herd. When you think that conditions are safe, the outside of the herd is the best, for there the grass is fresh, while those in the middle see only grass that is half-eaten or trampled down. The aggressive zebras, on the outside of the herd, eat much better.

On the other hand—or hoof—there comes a time when lions approach. The outside zebras end up as lion lunch. The skinny zebras in the middle of the pack may eat less well but they are alive.

A portfolio manager for an institution such as a bank trust department, insurance company or mutual fund cannot afford to be an Outside Zebra. For him, the optimal strategy is simple: stay in the center of the herd at all times. As long as he continues to buy the popular stocks, he cannot be faulted. On the other hand, he cannot afford to try for large gains on unfamiliar stocks that would leave him open to criticism if the idea failed.

—RALPH WANGER, *Zebras in Lion Country*

The term *groupthink* was popularized during the Vietnam era. Essentially it describes how smart people, when together, make really dumb decisions. Groupthink typically occurs when people become preoccupied with what the group consensus is, and that obsession overrides the motivation to assess situations objectively. Groupthink, while in the same

family as conventional wisdom, is driven by group dynamics, whereas conventional wisdom is an aggregate collection of the seemingly obvious.

Take, for example, the concept of investment risk. As individuals, most people would define risk as the chance of permanent investment loss, the degree of volatility, uncertainty, and so on. In a group setting, risk becomes defined as deviating from what the consensus thinks. Not looking stupid is a very powerful influence on how people look at risk.

As it applies to investing, groupthink results in it being riskier to buy a lesser-known company with above-average growth potential and a reasonable valuation than it is to buy shares in a well-known company with perfection already reflected in its price. Yet "the group" knows the company, loves its history of success, and considers it a blue chip. This is the investment equivalent of the old saying "You can't get fired for hiring IBM."

## STAR GAZER

**HOWARD SCHULTZ**  
founder and CEO of Starbucks Corporation

*Howard Schultz is the visionary who turned an obscure coffee company in Seattle into a dominant global leader and one of the most admired and respected brands. When Schultz's company, Il Giornale, bought Starbucks and changed the chain name to Starbucks Corp. in 1987, there were only 17 stores; today Starbucks is a \$24 billion market cap company that operates its stores worldwide.*

*Michael Moe: What were some of the key things that you were able to do that made Starbucks what it is today?*

*Howard Schultz: When I look back to the earliest part of the growth and development of the company, there was a constant*

*theme that we had that we have today. And it was linked to consistency. I was the head of the growth guys in almost every discipline. For the earliest days we saw ourselves as a global leader, then a local company in Seattle. They don't see we ever imagined there would be 1000 stores all over the world but we saw a design and had the vision of building a bigger company. We saw our signs on the streets and there are commitments to accomplish that. What if it was systems that structured people or managing—all these things that lead us to hire and invest ahead of the growth curve. If you are not investing ahead of the growth curve that is going to catch up to you.*

*We were in the business of really building the equity of the brand from within. That meant that the culture, the values, and the guiding principles of how we were going to build the company were going to be the way we communicated the essence of the Starbucks experience in store, people and then to our customers. We said early on that we wanted to exceed the expectations of our customers but in order to do that we recognized we had to exceed the expectations of our people first. One of the main reasons that Starbucks has such a strong foundation of trust with our customers is that we've built an emotional relationship about human connection with both our people and our customers and that has defined the brand. The facts that we are in the coffee business and that it's such a social and romantic beverage have given us the platform to create a sense of community in our business and in the company and we have been able to do that around the world. As employees we want to be valued and respected and as customers we want to walk into a place that feels safe and that is not trying to get money out of our pockets but is trying to touch our hearts and give us something back and that was*

given and the way to expand the company well beyond what we've thought.

MM: Bill Campbell, chairman of AT&T, tells a great story of being a lone paterfamilias. When someone asked who would be the first hire at a new company, he said, VP of sales and you said VP of HR. And then he said he was wrong and agreed with you.

HS: It is true that I was asked if we were starting a business today who would hire first, and I said head of Human Resources. I think that in most growth companies, people recognize almost intuitively that the most important function in a company is human resources, and they get to that too late because they are hiring for sales or marketing or financial, whatever I would like to call it, and say that HR has to be right at the beginning of the core competency of the very highest level and then over time you have to make sure the HR function not only has a seat at both the leadership table in the company and the boardroom, but that that seat is valued and respected and their opinions are going to be heard. When I think back about why we have succeeded almost without hesitation I'd say it's because we have been able to attract and retain great people. We've almost always been able to attract the right person at the right time, and I think it's because we've invested so heavily in the HR function and have put it in a position to always be at the leadership table of the company. I sit back today looking at what we're doing in China. We're replicating that exact same model now in China, where we continue to make significant investments well ahead of what the business is today. We couldn't succeed at the level we are dreaming about unless we were going to do that as we did in the United States.

MM: How do you create the brand of the future and what are the going to represent?

HS: I don't think there's one formula for success, but I think there are consistent aspects in most enduring brands. I hate to use words that have been used before, but there has to be great authenticity and truth to the story. Building a brand on the foundation of a 30-second or 60-second Super Bowl commercial without any substance is not going to work—it's more noise in today's world in one way successful much more difficult than ever before, but in another way, easier because there aren't many companies that stand for these things since they are looking for the short-term results and the short-term solution—and he is right. Think about the great brands of today. Think about what Apple has done and what the iPod represents, the emotional engagement that that device has to the customer. Think about Nike, IKEA and Google. These are companies whose products transcend the experience the customer is having. It's much more meaningful than just the experience. They have a level of emotional engagement from the customer that is very very different than say buying a box of Tide.

MM: What do you think about international opportunities for Starbucks as well as for other businesses?

HS: Whether you read Tom Friedman's book *The World is Flat* or you pick up any business or consumer newspaper, you can't escape the fact that China and the rest of Asia are going to be at the center of the world. What's going on in India or Russia, in all of these countries, speaks to the fact that the Internet in many ways has been the death of distance. I don't look at customers or markets as where they live or what country they're in.

I look at one marketplace. No, I'll really say in order to succeed in these multiple marketplaces, you have to be as relevant and as local as possible, but I think that from the beginning, you have to see that the marketplace and the opportunities are well beyond the borders of the United States. We probably did go to Japan earlier than we had the capacity to do so. We learned as we went, we made some mistakes, but if we hadn't done that, we wouldn't be in a position to have more than 3,000 stores in 37 countries now and we never would be in a position to take advantage of the opportunity in China. You want to balance doing after new opportunities with not sacrificing the core, but you have to dream big and be able to seize opportunities and sometimes you're not prepared for it.

MM: *Talk about protecting the core and what you think about growth.*

HS: Growth can be intoxicating and very seductive and you have to make sure that someone is looking in the rearview mirror because it does reveal mistakes. You have to keep looking back as well as forward.

Great retailers are very adept at preserving the core business while enhancing the experience. We've done that around music, the Starbucks card, and the WiFi network that we've created. All of these things have enhanced the experience but have been very complementary to the core coffee business. I think that as a retailer and as a merchant, you want to make sure that you aren't doing anything that would in any way dilute the integrity of why people come in. In terms of the corporate aspect of growing the company, I think if I've learned one thing over the years, it's that you have to make sure that you're not chasing too many rabbits; that the core business

is really the foundation of what you do and that you don't go on half-baked ideas and constantly get sidetracked by every opportunity that comes in the door, because most growing companies are consistently going to have more opportunities than they have capacity. They really succeed with companies that have done so well along the way but then they embrace some level of arrogance and they start doing things that over time erode either the equity of the brand or trust with the customer or else in some cases are fatal to the company's ability to sustain itself.

MM: *How do you think about competition?*

HS: I think many companies become paranoid about competitors and what competitors are doing and that takes them in directions in which they are trying to rise to competitive pressure. Another thing we have learned over the years is that you have competitive veterans who we do as a company in our stores with our people and obviously how we create wonderful moments with our customers.

MM: *When you look to the future, either for Starbucks or just in the marketplace, what are you most excited about?*

HS: Like everyone else in the world, I am amazed and stunned by what is going on in China. I'm spending a week every quarter in China. Having said that, I want to share with you that I think a lot of people are going into China perhaps the way they went to the Gold Rush. Not unlike the Internet, there is going to be a bust and people are going to fail.

MM: *What are you looking for?*

was ever created by a group. Similarly, I am not aware of any great investment track record that has been created by a committee. Any manager who is truly trying to anticipate future economic trends is bound to take positions that are wildly at variance with what is popular in the market, and this behavior will appear eccentric and ill informed in comparison to the current market favorites.

Thoughtfully zigging when others zag is often the key to success on Wall Street. Blindly going against conventional wisdom isn't any brighter than mindlessly embracing popular opinion, however. In other words, success in growth investing requires an intent focus on the drivers of growth and steadfast objectivity even when this means running against the grain of the consensus. As an example, many growth investors are known as growth mavericks or, in more difficult investment environments, fair-weather outperformers. They rack up disproportionate gains when the economic and market environments are moving higher, but they have a difficult time "rotating" when the weather turns ugly.

There is always a growth market somewhere. At any given time, however, the willingness to adapt to where the growth is now is a discipline that is difficult to stick to.

**THINKPOINTS**

- Compound interest is the key ingredient to explosive stock performance over time.
- It's vital for you to find companies that can consistently grow at a rate of more than 20%.
- Cutting losses early on mistakes is critical to avoiding the compounding effects of negative returns.
- To achieve big investment returns, you have to think independently.

It's time is going to be a new, you do on retail players that are...  
...sides of comfort for people. One of the things Starbucks...  
...has benefited from significantly is the fact that we have not only...  
...become the mid-price, but more than that, a high environment...  
...has become as important as the coffee itself. Retailers and mar...  
...chants that create environments where people enjoy them...  
...self as one of the merchants trying to sell products are going to...  
...win. Not enough people have found comfort. Another dynamic...  
...in Starbucks is the adoption rate of things. It took us 20...  
...plus years to build the Starbucks brand. When things are pos...  
...tioned properly in today's environment because of quick free...  
...information flows, there's an unbelievable rate of adoption that...  
...is dynamically quicker and stronger than in years past.

*My view may vary to Starbucks' success.*

It's even though Starbucks, even the coffee business and the...  
...it's about the business, not the business, they really ignore the...  
...way in which your customers are acting during the day outside...  
...of your stores. You have to be a chameleon and really get un...  
...derneath all this so that you maintain your relevance.

Another example of how groupthink infects thoughtful evaluation is in portfolio diversification. A group generally considers it less risky to own a broad, diverse portfolio than to own a relative handful of stocks that they follow closely and whose business and fundamentals they fully understand. Ironically, investors that tend to underperform the market do as the group does to avoid having all their eggs in one basket. In contrast, investors that demonstrate superior performance over time maintain more concentrated portfolios, and they watch each egg very closely.

It should be no mystery that no great work of art, recipe, or music

## High Earnings per Share = High Internal Rate of Return (the Argument)

"I skate to where the puck is going to be, not where it has been."  
—WAYNE GRETZKY

IT WOULD BE CONVENIENT IF, to pick tomorrow's winners, you just had to look at past results. Unfortunately, that plan doesn't work because the world is constantly changing.

If you were to look at the leading U.S. industries in 1925, you would find that 23 of the 100 largest capitalization companies were in the railroad industry. Ten were automobile companies, and four were in metals and mining. None of the 100 largest companies were in information technology, health care, or financial services.

Fast forward the clock to 2005. Only one metals and mining com-

THE PAST ISN'T A PROLOGUE TO THE FUTURE		
Number of Companies in the Top 100		
INDUSTRY	1925	2005
Railroads	23	0
Metals and mining	4	1
Autos and parts	10	0

NUMBER OF COMPANIES IN THE TOP 100		
INDUSTRY	1925	2005
Information technology	0	20
Financial services	0	23
Health care/pharmaceuticals	0	17

Source: FactSet, Michael Milken.

pany was among the largest 100 companies, and no companies were in automobiles or railroads. Conversely, 20 information technology companies were among the 100 largest, as were 23 financial services companies and 17 health-care companies.

While we know that we won't find the winners of tomorrow by reviewing the winners of the past, it's instructive to analyze the top-performing companies to learn what to look for when identifying the stars of tomorrow.

### → TOP-PERFORMING STOCKS, 1995-2005

To identify the all-stars in the stock market, I evaluated more than 10,000 companies to find the 25 top-performing stocks from 1995 to 2005 on a total return basis. Who made the list was interesting but not that educational—after all, any knowledgeable follower of the market could have picked these in hindsight. And since we know the past isn't a prologue for the future winners, what's noteworthy isn't who made it, but how they got there.

In order to place my convictions in perspective, I analyzed the top-performing companies' characteristics to highlight where growth companies come from and how they create value for shareholders. Notably, many of these companies exemplify the megatrends that prevailed during the study period—a fact that is far from coincidental.