THE GORILLA GAME

An Investor’s Guide to Picking Winners in High Technology

GEOFFREY MOORE, PAUL JOHNSON & TOM KIPPOLA
MAIN IDEA

Most people are familiar with calculations such as: “If you’d invested $10,000 in Microsoft stock in 1986 when it went public, your stock would now be worth more than $1.8 million”. The challenge has always been, however, how do you identify such potential super performers of tomorrow before their stock becomes highly valued in the marketplace?

Gorilla game investing is an investment strategy designed to answer that challenge. It focuses specifically on high technology stocks and industry sectors. Within those sectors, a “gorilla” is a market leading company, which has such a dominant position - by virtue of its proprietary technology - that it can be likened to a huge gorilla which dominates its part of the jungle.

To understand the dynamics of market leadership in a high-technology market, a gorilla toolkit is first developed. It contains the concepts, definitions and working theories on which gorilla investing is based. This is contained in Part 1 of this summary.

Part 2 outlines the essential principles of gorilla investing, along with the 10 rules of the system. It deals with how to spot a high-tech market about to enter hypergrowth, why you should initially spread your investment over all potential gorillas and then why you should gradually consolidate your investment resources into one company once it attains gorilla style dominance of its market.

Finally, how this game plays out in the real world is outlined briefly in Part 3 where an Internet investment strategy is developed using gorilla game principles.

Gorilla game investing ultimately attempts to factor into a company’s future market value the forward-looking dynamics unique to high-technology markets - before the rest of the market becomes fully aware of them. As such, it attempts to position investors in emerging super-performers as early as possible, so that in future, you can begin your own version of: “If you’d invested......”

PART 1 - A GORILLA INVESTING TOOLKIT - CONCEPTS & DEFINITIONS  Pages 2 - 4

To be equipped to successfully identify and invest in gorilla stocks, you first need to assemble a toolkit of relevant concepts and definitions. In particular, you need to understand:

1. The concept of layers of technology
2. The definition of discontinuous innovation
3. The concept of the technology adoption life cycle
4. The concept of a high technology adoption life cycle
5. The definition of a gorilla company
6. The concept of high-tech value chains
7. Some stock market valuation basics

PART 2 - THE ESSENTIAL PRINCIPLES AND 10 RULES OF SUCCESSFUL GORILLA INVESTING  Pages 5 - 7

The essential principles of successful gorilla investing are:

1. Identify consumer markets which are just in the process of transitioning into hypergrowth.
2. Buy stock in all companies which have a legitimate chance at becoming a gorilla.
3. As a gorilla emerges, sell all other competitor’s stock and buy more stock in the gorilla.
5. Only sell gorilla stock when a new category emerges which eliminates the gorillas customer base.

Applying these principles to the markets has provided 10 rules for successful gorilla investing:

Rule 1. In the application layer, buy stock in the bowling alley.
Rule 2. In the infrastructure software or hardware field, buy stock at the start of the tornado.
Rule 3. Buy a basket of stock in all companies that have a legitimate chance of becoming a gorilla.
Rule 4. Hold gorilla stocks long-term. Sell only when a viable substitution product emerges.
Rule 5. Hold application layer stocks for as long as they exhibit potential for further market expansion. Never hold enabling technology layer stocks which failed to become gorillas.
Rule 6. Sell stock in companies which failed to become gorillas as soon as the hypergrowth tapers off.
Rule 7. As soon as it becomes clear a company will never become a gorilla, sell.
Rule 8. Money taken out of non-gorillas should be reinvested in the remaining gorilla candidates.
Rule 9. When two gorillas compete head on, hold both until the outcome becomes clear.
Rule 10. Most news has nothing to do with the gorilla game. Ignore it.

PART 3 - APPLYING GORILLA GAME PRINCIPLES TO INVESTING IN THE INTERNET  Page 8

While the Internet itself is not a tornado, it is a place where a vast number of tornadoes will be generated in the future. Therefore, it makes an ideal place to watch for developing tornadoes.

The first wave of growth in the Internet was for the enabling technology layers - infrastructure investments as the basic concept of the Internet took shape. Today, however, a second wave of Internet investment has begun as application layer investments are beginning to be made in larger and larger amounts.
PART 1
A GORILLA INVESTING TOOLKIT
- CONCEPTS & DEFINITIONS

Main Idea
To be equipped to successfully identify and invest in gorilla stocks, you first need to assemble a toolkit of relevant concepts and definitions.
In particular, you need to understand:
1. The concept of layers of technology
2. The definition of discontinuous innovation
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Supporting Ideas

Concept: Layers of Technology
Most high technology products are made up of a number of inter-connected layers, each of which play a role in delivering a successful product. Each successive layer adds value, and will generally be supplied by a company which specializes in providing technologies for that layer only.
Conceptually, this can be visualized as:

<table>
<thead>
<tr>
<th>Application Software</th>
<th>System / Operating Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Semiconductors</td>
</tr>
</tbody>
</table>

Electricity

Later in Part 1, a definition of a “gorilla” will be given as a company which dominates the layer within which it operates. However, a company which dominates one layer may also be able to influence purchases in other layers. When that occurs, its relative power becomes larger and more significant.
As a general rule, companies which dominate the enabling technology layers tend to evolve towards a winner-takes-all position over the longer term whereas application layer companies never quite establish that level of market share.
Also, it should be noted that enabling technology companies have the most industry power whereas application layer companies have greater customer power. This will be explained in more detail in Part 2.

Definition: Discontinuous Innovation
Mass consumer markets continually offer opportunities for the introduction of products which offer more value for the same price. Most of the time, these innovations are enhancements and improvements on existing products, but from time to time, breakthrough products come along which are not compatible with existing standards. Successful breakthrough products offer such compelling benefits that new standards and new operating models are quickly developed to help these products succeed.
When new products build on existing standards, they are termed “continuous innovations”. When breakthrough products come along which utilize new standards, they are termed “discontinuous innovations”.

Concept: Technology Adoption Life Cycle
Whenever a discontinuous innovation is introduced to a consumer market, five different types of consumer profiles will emerge:

1. Innovators or Technology Enthusiasts - people who like to be on the cutting edge of technical developments and who provide early product visibility and credibility.
2. Early Adopters or Visionaries - people who like to try and gain a head start over the mass market. Often made up of company managers looking for a competitive edge.
3. Early Majority or Pragmatists - people who keep current with the market and will adopt a new technology once standards have emerged and the product features are well defined and quantifiable.
4. Conservatives or Late Majority - people who prefer the status quo and resist change until prices for the new technology fall so far they can’t resist joining in.
5. Skeptics or Laggards - who prefer spending on low-tech non-technical solutions. They will only reluctantly buy new technology when their current systems become unsustainable.
Concept: High-Technology Adoption Life Cycle

For discontinuous high-technology products, the technology adoption life cycle differs from the previous version, and six different types of consumer profiles will emerge:

1. Early Market Consumers - either technology enthusiasts or new technology sponsors making large investments to develop future commercial opportunities.
2. Chasm - nobody is sure how much market penetration will ultimately be achieved. Therefore, the visionaries and the pragmatists watch the technology, while the established players throw up entry barriers to discourage new competitors.
3. Bowling Alley - Market penetration phase when various niche market applications for the new technology start to emerge, and companies start to gain a competitive advantage by adopting the new technology in some departments.
4. Tornado - a hypergrowth stage when companies suddenly start rushing to adopt the new technology, causing severe shortages in supply. Market growth in this phase is at least 100% per year and more often 300% per annum or more. The key parameter in this stage is market share and the key discipline is engineering.
5. Main Street - following three or so years of Tornado strength growth, industry standards are now established and supply rises to meet demand over the longer term. The focus turns to specific applications, and the key parameter becomes margins rather than market share. The key discipline now becomes marketing.
6. Assimilation - represents the end of the technology adoption cycle. The product is now established, and will now generate the bulk of its revenues and profits as economies of scale come into play and the technology becomes embedded in mass consumer products and so on.

Definition: Gorillas

During the tornado period, a number of companies will offer various competing standards for the new technology. Eventually, one company will shoot ahead of all the others. Sometimes this is the result of better marketing or a superior product, but it can also happen for numerous other reasons.

Once one company pulls ahead, suddenly everyone will jump on the new emerging standard bandwagon because it is easier to support one standard than a number. Suddenly and dramatically, the market valuation of the standard setter will leap ahead of its competitors - and this relationship will be maintained for the entire life cycle of the new technology.

That company that sets the new standard is defined as a “gorilla” - because it will totally dominate the market for that technology from that point on. In other words, the relative relationships between the various competing companies established during the tornado phase will last forever.

This is significant because the amount of future stockholder wealth generated by an emerging gorilla outpaces other investment returns by huge margins. If you can buy a stake in an emerging gorilla before its market value increases dramatically, you can generate truly impressive investment returns - and maintain ongoing growth for long periods of time.

The long term competitive advantages of gorillas are:

1. Gorillas get more customers because they attract better press coverage than their competitors and they get premium treatment from sales channels looking to maximize sales. In addition, gorillas attract potential partners who are interested in having access to the market leading company. There is a positive synergy available for commercial exploitation by third-parties which does not go unnoticed.
2. Gorillas can raise barriers to market entry by making subtle changes in its technology. Over the longer term, it will thus become more expensive for customers to switch to competing standards - therefore gorillas can successfully keep more customers.
3. Gorillas can use economies of scale to continuously drive their costs down. They can even force their partners to bear the major portion of enhancement development costs by outsourcing low-added-value work to third parties.
4. The gorillas products can be priced at a premium because they are the industry standard. In other words, a gorilla can keep its profits high while competitors are forced to offer discounts simply to offset the fact they are not the industry standard.

Examples of gorillas:

- Microsoft - possibly the most successful gorilla in history, went from a market capitalization of $600 million in 1986 to $130 billion ten years later - an increase of 20,000-percent.
- Intel - whose stock appreciated 1,200-percent from 1990 to 1996, generating an average annual rate of return of 44.3%.
- Oracle Corporation
- Cisco Systems - which delivered a 100-fold increase in its share value from its IPO in April 1990 to June 1997.
- SAP Software
Concept: High-Tech Value Chains

Gorillas are established only during the tornado phase of the high-technology adoption life cycle. Tornadoes, in turn, only occur when a new value chain comes into existence.

To visualize a value chain:

**Product Providers**
- This is where products with new, highly differentiated benefits are assembled from components and subsystems. Gorillas live here but require the cooperation of the entire value chain.

**Service Providers**
- Take the new products and develop them into systems which can be sold through a sales channel and supported technically. This is the make it or break it point in the creation of a new value chain.

**Customers**
- Technical buyers, end users and economic buyers must all cooperate for the value to make an impact on the bottom line - therefore giving a return on the purchase investment.

For the economic value of a new innovation to be realized, new products incorporating the technology must first be developed. These products are then integrated into existing systems by product providers, resulting in a system which is sellable through sales channels.

Service providers add value by supplying sales, installation, training and integration capabilities. They cannot set technical standards in and of themselves, but they are an essential link in the value chain.

Customers must have the technical capacity to utilize the new system effectively. For business-to-business markets, the three groups shown - technical buyers, end users and economic buyers - must all be satisfied before added value is created. For consumer markets, these three roles tend to merge together.

If the customers, on adopting the new system, become more productive, added value is created and benefits flow back up the chain to service providers and ultimately product providers in the form of additional sales.

Once a new value chain is established (which is definitely not a foregone conclusion for most new technologies) everyone in the chain ramps up their investment and a mass market grows quickly - tornado conditions.

Conversely, if any link in the value chain is weak or non-existent, a new value chain will never be established, the new technology will be unsuccessful and a tornado will never materialize.

Concept: The Basics of Stock Market Valuation

In its purest form, a company’s current stock price is based on the present value of the company’s total expected future earnings. That is, when you buy a share in any company, you’re buying a portion of its anticipated future earnings.

A company’s market capitalization is simply the stock price per share multiplied by the total number of shares the company has issued. Factors that will raise (or lower) any company’s market capitalization include:

- The risk that the company may fail to achieve its projected future earnings.
- Changing expectations about the company’s ability to generate future earnings.

Conceptually, market capitalization can be visualized as:

If a company now enters a hypergrowth market for one or more of its products, the returns should rise proportionately, since future earnings would be higher. Additionally, if the company can attain gorilla status within that hypergrowth market, investors would anticipate returns to rise further and be sustained for a longer period than previously factored in.

The result is the company’s market capitalization increases:

Interestingly, there is always a tendency for gorilla stocks to be under-priced in the market while the extent of the future returns are more accurately determined.

Therefore, gorilla game investing is based on the premise that sizable buying opportunities in new gorilla stocks will always exist, and that these specific stocks represent a significant opportunity to earn above average returns over sustained periods of time.

The key to realizing these gains lies in reading the signs of an emerging gorilla before the general market.
PART 2
THE ESSENTIAL PRINCIPLES
AND 10 RULES OF SUCCESSFUL
GORILLA INVESTING

Main Idea
The essential principles of successful gorilla investing are:
1. Identify consumer markets which are just in the process of transitioning into hypergrowth.
2. Buy stock in all companies which supply products into the market, and which have a legitimate chance at becoming a gorilla.
3. As a gorilla or market leader emerges, sell all other competitor’s stock and consolidate your personal stock holdings in the gorilla.
5. Only sell your gorilla stock when a new category emerges which threatens to eliminate the gorilla’s customer base.

Applying these principles to the markets has provided 10 rules for successful gorilla investing:

When should you invest in a gorilla?

Rule 1
In the application layer, buy stock in the bowling alley.

Rule 2
In the infrastructure software or hardware field, buy stock at the start of the tornado.

What stocks should you buy?

Rule 3
Buy a basket of stock in all companies that have a legitimate chance of becoming a gorilla - usually between two and four companies in total.

What should you hold and for how long?

Rule 4
Hold gorilla stocks long-term. Sell only when a viable substitution product emerges.

Rule 5
Hold application layer stocks for as long as they exhibit potential for further market expansion. Never hold enabling technology layer stocks which failed to become gorillas.

Rule 6
Sell stock in market-leading companies which failed to become gorillas as soon as the hypergrowth pattern tapers off.

What should you sell?

Rule 7
As soon as it becomes clear a company will never become a gorilla, sell.

Rule 8
Money taken out on non-gorillas should be reinvested in the remaining gorilla candidates immediately.

Rule 9
When two gorillas compete head on, hold both until the outcome becomes clear.

What should you do with all the market information?

Rule 10
Most news has nothing to do with the gorilla game. Ignore it.

Supporting Ideas
Focusing first on the essential principles of successful gorilla investing:

1. Identify consumer markets which are just in the process of transitioning into hypergrowth.

In principle, this requires you to identify when a new value chain has been established, and a new product offering is about to muscle its way into the mass consumer marketplace and begin generating sales.

In practice, the best way to identify these emerging hypergrowth opportunities is to gain some solid industry knowledge by:
  - Subscribing to the basic trade magazines that cover the high-technology industry
  - Scanning the Internet based news sites that cover the high tech field

Whenever you identify a new value chain in the process of formation, ask these key questions:
1. Can this value chain develop into a tornado style mass market?
2. If so, what conditions are currently holding it back?
3. Are these constraints likely to be removed?
4. If so, what is the last remaining constraint, when is it likely to be removed and by which company?

As you assemble this type of perspective, you will be well positioned to time your entry into a market just about to enter a hypergrowth expansion. Keep in mind that generally speaking, the removal of constraints will be achieved through the emergence of a compelling application or simplification to remove complexity. Whenever you see these conditions occurring, a hypergrowth market opportunity is just about to open.

This principle forms the basis for Rules 1 and 2 of the 10 Rules for Successful Gorilla Investing covered next.

2. Buy stock in all companies which supply products into the market, and which have a legitimate chance at becoming a gorilla.

This principle leads to Rule 3. Due to the fact you are unable to accurately forecast which company will ultimately attain a dominant market position and become a gorilla, your first strategy should be to have some equity in each, and to watch carefully how events unfold. Quite logical and intuitive.

3. As a gorilla or market leader emerges, sell all other competitor’s stock and consolidate your personal stock holdings in the gorilla.

Rules 4 - 8 are based on this principle. The basic concept is that both entry into a hypergrowth market and narrowing your investment focus from all potential gorillas to the one successful gorilla will maximize your returns.

The concept of taking the capital invested in the also-rans and reinvesting in the gorilla may appear counter-intuitive at first but in fact is quite sound, due to the fact gorilla stocks will always out perform the market over the longer term. More on this point in the material on Rule 8 that follows.
Gorilla investing is not focused on generating profits through short term buying and selling activities. It is a “buy-and-hold” approach to position you in quality companies which have the prospect of out performing the market for a number of years. This principle is reflected in Rule 10.

5. Only sell your gorilla stock when a new category emerges which threatens to eliminate the gorillas customer base.
Rule 9 takes its lead from this principle. Even a well entrenched gorilla won’t last forever. Sometimes, a gorilla will face external threats that emerge quickly, but more often external events will affect business very slowly. Simply keep in mind at some point, you will want to exit the company.

The advantages of these principles are:
1. A lot of potential to generate truly impressive investment returns.
2. Minimized risk, because if you do your homework correctly, you will only be investing in companies entering hypergrowth markets.
3. Flexibility in timing. You don’t have to time your buying or selling actions too finely - there’s quite a lot of leeway built in, allowing for intervals when you might be tied up in other projects.

The disadvantages of gorilla investing principles:
1. You’ll have to exercise discipline to only buy stocks for rational reasons rather than buying on a hunch, making a contrarian investment or refusing to follow the crowd.
2. You’ll have to do the groundwork yourself - that will mean keeping up to date with the high-tech industry. The information is freely circulated, but you’ll have to allocate time to do your research.
3. You’ll miss out on investing in some speculative stocks which generate true windfalls.

The 10 Rules of Gorilla Investing are:

When should you invest in a gorilla?

Rule 1
in the application layer, buy stock in the bowling alley.

Rule 2
in the enabling technology layer, buy stock at the start of the tornado.

The bowling alley (explained on page 3) is the early market penetration phase. The tornado is the hypergrowth stage.

Ideally, you want to buy before the market has truly factored in the true potential increase in the value of a stock. For application layer stocks, this is when evidence is just beginning to emerge that various niche markets are beginning to be established for new software offerings.

The key indicator that it is time to enter the application layer market is when the application starts being integrated into the processes of one vertical market. Once that occurs, not buying is a bigger risk than buying for all companies in that market.

For enabling technology layer companies, however, the existence of niche applications is not a strong enough buying signal. There are still too many risks - the technology may be cloned, a single standard may never emerge, huge additional investment may be required to move from the niche markets to the broader general market.

Therefore, for enabling technology layer companies, wait for another key indicator: when trade publications stop printing articles about whether a new technology is ready and start running articles about who is the emerging market leader.

What stocks should you buy?

Rule 3
Buy a basket of stock in all companies that have a legitimate chance of becoming a gorilla - usually between two and four companies in total.

It’s very risky to try and predict which company will ultimately emerge as the gorilla. However, it will be fairly obvious which companies are the obvious front-runners. Therefore, don’t even try to designate a gorilla-in-waiting. Instead, buy equal amounts of stock in all leading candidates.

What should you hold and for how long?

Rule 4
Hold gorilla stocks long-term. Sell only when a viable substitution product emerges.

While it is true that massive shifts of power will regularly occur in a high-technology market, these will be reasonably obvious to anyone following the market. Until then, stay invested in a gorilla stock. It will out perform the market over the longer term, particularly if it continues to extend its competitive advantages by moving into new hypergrowth areas with additional technologies.

That’s not to say there will be a total absence of volatility in gorilla stock prices. every market will react positively when short-term expectations are exceeded and negatively when the company fails to meet other short-term targets.

The bias, however, should be to stay invested in gorilla stocks for the long term.

Rule 5
Hold application layer stocks for as long as they exhibit potential for further market expansion. Never hold enabling technology layer stocks which failed to become gorillas.

For application layer stocks, it’s okay to continue to hold stocks in companies which failed to develop into gorillas. They will still have room to grow within their niche markets. In that case, you only sell when it’s clear their niches won’t expand any further or a new technology threatens to erode their domination of that specific niche.

By contrast, enabling technology layer companies which tried to become gorillas but failed should never be long-term holds. They can’t survive in the long run, and the money invested in them will generate higher returns if it is realized and reinvested in the gorilla stock. Therefore, plan on selling all enabling technology layer stocks which lost out in the battle for the new industry standard.
Rule 6
Sell stock in market-leading companies which failed to become gorillas as soon as the hypergrowth pattern tapers off.
The difference between a market-leader and a gorilla in a hypergrowth market is that gorilla’s control their own proprietary technology while market leaders do not. The market-leader’s competitive advantage is based on executing better rather than owning the technology.
Therefore, any stock bought in potential gorillas who later turned out simply to be market-leaders rather than gorillas should be sold, and the funds reinvested in the established gorilla. Sell when the companies stumble in the market or on the first signs of a decline in revenue growth.

What should you sell?

Rule 7
As soon as it becomes clear a company will never become a gorilla, sell.
Gorilla investing is an investment approach using a basket of stocks rather than trying to invest solely in one star performer. Therefore, you will be invested in all potential gorilla candidates at first, with an objective of ultimately increasing your investment in whatever gorilla emerges at the expense of investing in the also-rans.
Therefore, be prepared to move your investment from the candidates to the eventual gorilla - even if you have to take a short-term loss to do so. You’ll be moving from a long-term under performer to the best possible long-term stock.

Rule 8
Money taken out on non-gorillas should be reinvested in the remaining gorilla candidates immediately.
Your first reaction might be to reinvest the capital elsewhere. This is unwise, however, as the gorilla will ultimately out perform the market. Therefore, the safest way to reduce risk at this stage is not to diversify but to concentrate on the gorilla, and to increase your investment in gorilla stock with the funds realized by selling the unsuccessful gorilla candidate stock.
Even more importantly, your selling of the unsuccessful gorilla candidate will precede general market awareness - allowing you to achieve optimum pricing at the time of sale. At the same time, the general market will not yet have priced into the gorilla the long-term added market value. Therefore, you’ll be able to acquire stock in the gorilla before it appreciates substantially.

Rule 9
When two gorillas compete head on, hold both until the outcome becomes clear.
Occasionally a gorilla stock in one industry will adapt a new technology which enables it to compete head on with another gorilla in an entirely different field.
Whenever that happens, it becomes entirely impossible to accurately forecast the outcome. Hold on and wait to see which company’s management proves to be the most effective.

What should you do with all the market information?

Rule 10
Most news has nothing to do with the gorilla game. Ignore it.
Most of the day to day general market information will have no relevance in your investment strategy. Therefore, whenever new information emerges, ask yourself:
1. Is this piece of information talking about the possible emergence of a new tornado - a new hypergrowth market?
   If not, ignore it totally.
2. If, on the other hand, the new information does suggest the emergence of a new tornado, separate the hype from the facts by asking:
   - Can you see evidence of the birth of a new value chain?
   - Is there evidence of a new niche market developing?
   - Is there a compelling application materializing?
   - What are third-party partners saying?
   - Is a new proprietary industry standard being proposed?
   - What are the costs of switching to the new technology?
   - Are there any entry barriers that must be met?
   - Is any new future technology coming in the same field?
If the answer is yes to these second set of questions, you’d better start doing your research because a tornado may be coming, and you’d better start assembling a list of the potential gorilla companies.

Key Thoughts

“The amount of wealth generated by an enabling-technology tornado that creates a true gorilla dwarfs any other investment returns on the planet. This is the Super Bowl, the Oscars and the Grammies all rolled into one. To not play here at all is to hate yourself in the morning.”
– Geoffrey Moore, Paul Johnson & Tom Kippola

“In the final analysis, we think the gorilla game is a particularly appropriate approach to investing for private investors who are risk averse but who need to build wealth faster or in greater amounts than conventional alternatives support.”
– Geoffrey Moore, Paul Johnson & Tom Kippola

“We expect from time to time to create a bit of controversy. We also expect, from time to time, to say things that are flat out wrong. We have tried very hard to get things right the first time, but our experience as authors and analysts is, nothing is 100% right ever, and certainly not at the first release. In that light, we have made a commitment to maintain a web site at www.gorillagame.com, where readers can raise challenges, pose questions, share results and generally pursue further the topics and strategies outlined in this book. We encourage both active gorilla game investors and all other interested constituencies to use this web site as a way to learn, as well as to teach, so that we all can become better at the gorilla game.”
– Geoffrey Moore, Paul Johnson & Tom Kippola
PART 3
APPLYING GORILLA GAME PRINCIPLES TO INVESTING IN THE INTERNET

Main Idea
While the Internet itself is not a tornado, it is a place where a vast number of tornadoes will be generated in the future. Therefore, it makes an ideal place to watch for developing tornadoes.
The first wave of growth in the Internet was for the enabling technology layers - infrastructure investments as the basic concept of the Internet took shape. Today, however, a second wave of Internet investment has begun as application layer investments are beginning to be made in larger and larger amounts.

Supporting Ideas
Using the High-Technology Adoption Life Cycle chart from page 3, the following conditions exist as at the end of 1997:

Main Street Applications
- Academic research
- Browsing
- E-mail
No gorilla opportunities there as all three applications are available free of charge.
However, there are some established gorillas which will benefit from the growth of the Internet, including:
- Microsoft
- Intel
- Cisco

Tornado Applications
- Market research and competitive analysis
- Document management and distribution
- Marketing and public relations
- Personal education and entertainment
Most of these companies are transaction services, with the emphasis now changing from post-sale communications to pre-sales communications and the establishment of Internet brand names.
Potential gorilla opportunities in these tornado applications are:
- Netscape and Microsoft in the browser and web server software markets.
- U.S. Robotics and Rockwell in 56K modem technology.
- Web server hardware where Sun seems to be making good ground.
- Java application development tools from Sun, Symatech or Microsoft.
- Web transaction security systems from McAfee, Checkpoint, Security Dynamics or Cylink.

Bowling Alley Applications
- Distribution of software, both generally and inter-company
- Self-service management of human resource functions
- Inter industry associations and communications
- Supply chain commerce
- Development of virtual communities
- Movement of mass marketing to one-on-one marketing
These niche markets are starting to become more clearly defined, and are indicators of where the mass market will head in the future.

Chasm Applications
- Internet enabled public services
- Project collaboration
- Sale of commercial Internet content
These applications are still waiting for niche markets to evolve before they can move forward.

Early Market Applications
- Self-service technical support
- Eliminating paperwork for supply chain commerce
- Consumer commerce
- Opportunity to reengineer the education system
- Entertainment programming
- Consumer telephony
Once fully established, these early market applications will create compelling rationale for future investment on historic scales - but not yet.

Applying the principles of gorilla investing will result in the following portfolio of stocks (along with their respective weightings within the overall portfolio):

1. Browsers and Web Servers (total: 25%)
   - Microsoft (12.5%)
   - Netscape (12.5%)

2. Security Systems (total: 25%)
   - Checkpoint (6.25%)
   - Cylink (6.25%)
   - McAfee (6.25%)
   - Sec. Dynamics (6.25%)

3. Supply Chain Management (total: 25%)
   - I2 (12.5%)
   - Manugistics (12.5%)

4. Infrastructure Gorillas (total: 25%)
   - Cisco (8.33%)
   - Intel (8.33%)
   - Microsoft (8.33%)
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