WHAT SHOULD ONE PAY FOR GROWTH

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Capitalism is King

Since the fall of the Berlin Wall eleven years ago, the first clearly visible manifestation of the disintegration of the Soviet Union, capitalism has been unrivalled as a means of organizing economic activity. However, the capitalistic economy of today is very different from what has been traditional understood by capitalism.

Adam Smith in "The Wealth of Nations", published in 1776, stated:

> Consumption is the sole end and purpose of all production and the interest of the producer ought to be attended to only so far as may be necessary for that of the consumer.

Until recently, this consumer orientation was only intermittently adhered to, as most producers concentrated on his other great concept, the idea of labour specialization within an organization. This reached its ultimate manifestation in Henry Ford's River Rouge plant: starting in the late 1920s, it turned iron ore, coal, raw rubber and sand into automobiles. On one site, Ford did it all, making steel, glass, tires, castings and assembling the parts.

However, in his seminal 1937 essay, "The Nature of the Firm", Ronald Cose, the Nobel Prize winner for Economics in 1991, pointed out that this concept ignored market forces. In theory, carving up a plant such as River Rouge into numerous separate businesses could apply market discipline to every activity and thereby boost efficiency. However, it would require arms' length negotiations among those independent concerns, creating new and likely greater costs than those saved.

According to Alan Greenspan, in March 2000:

> We are now living through a pivotal period in American economic history.... It has become increasingly clear that this business cycle differs in a very profound way from the many other cycles that have characterized post-World War II America.

Three dominant forces that define the digital (new) economy and are embodied by the Internet appear to be the reasons for this:

- Knowledge becoming an essential Factor of Production

- Transformation of data into information through Digitalization
- The abolition of the effect of distance through Globalization.

One Way of Looking at Firms

In the light of these forces, the way investors and managers look at businesses must be subject to change. In the past, it was relatively easy to decide if a business fell into the growth, stable, or cyclical categories. To value it, one merely applied a multiple to the earnings per share, also paying some attention to book value and major appreciated assets, such as real estate.

Today it is more complex. We realize that obtaining growth is not an easy or continuous process. McKinsey & Company, management consultants worldwide, analyzed the results of 404 firms with only one business, although often in many countries, in fifteen industries over 30 years. They found that only 10% of companies that exceeded the average growth of profits in their industry during any particular year were able to repeat that performance in each of the following nine.

This conclusion is supported by Sanford C. Bernstein & Co., a New York investment firm, which reports that, historically, only 10% of large US companies have been able to sustain a 20% annual growth in profits for five years and merely 3% could maintain this for over ten; one firm, Microsoft, had achieved it for fifteen years.

Businesses, like trees, start, flourish and eventually wither; in some industries the life cycle is short - the poplars, for instance - in others quite long, such as the California redwoods. The fact that a business may run its course, does not mean that the firm itself cannot continue to grow for a long time. For instance, The Governor and Company of Adventurers of England trading into Hudson's Bay - a title they have since shortened - celebrated its 330th birthday this year. They have been in furs, liquor, timber, land dealings, oil & gas and dabbled in mining; now they operate successful department stores in many urban centres, and who knows what they'll be doing a hundred years from now.

Successful companies can and must outlive any individual business. What sets them apart is their ability to create new activities. A good example is General Electric, one of the original twelve leading companies when the "Dow Jones Industrial Average" was first published in May 1896. It is still in the Index, and, measured by market capitalization, is now the third largest company in the world.

Our view is that every successful firm will normally contain examples of all of the following business segments, each in a different phase of its life cycles:

- Existing Operations
- Emerging Activities
- Future Opportunities

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Existing Operations, often quite mature, form the heart of most organizations; usually they account for nearly all, sometimes even more than all, of the profits and cash flow as the other segments generally consume cash. Extending and defending the Existing Operations is critical to short-term performance; the cash they generate and the skills they nurture tend to supply many of the factors needed for the other segments.

Emerging Activities, normally in the expansion phase, often are capable of transforming the firm, but usually require considerable investment of cash and other resources. Though profits may be some time away, they are real businesses, with products, employees and, one hopes, customers and revenues. The objective is to complement and eventually replace the Existing Operations.

Future Opportunities are the seeds of expected trees that represent options on tomorrow's businesses, but they must be real activities rather than just ideas. Examples include research projects, test marketing, prototypes, alliances, anything that marks the first steps towards an actual business, even though there may not be pro-fits for a decade. As many will fail, a firm should explore a number of such Future Opportunities.

Impact on Strategy

Some of those Future Opportunities will fail for internal reasons, others because of shifting industry trends; most will never become successful. Therefore a large number, with apparent promise and the support of management, needs to be underway at any time, but once their outlook seems diminished, they have to be shut down.

The segments pay off over different periods; the time frame will vary by industry, purpose and the depth of management's pockets. The timing of the pay-off, or it becoming a reality at all, is not directly connected with the need for funding and management support for Emerging Activities and Future Opportunities; they are not examples of short, medium and long-term planning, which deliberately defers some activities. Today, the successful firm has to contain many businesses in varying stages of maturity.

It is not unusual to find one, two, or even all three segments of a firm to be less than healthy. That may be for internal reasons, such as executives not devoting sufficient attention to one or more of them. Also, industry shocks can rewrite the expected fortunes of Existing Operations or Emerging Activities overnight, and Future Opportunities just may not occur. If one or more segments are ailing, the firm's growth will inevitably falter.

However, an accurate diagnosis provides the starting point for a solution. Knowing the strong and weak points of each segment gives managers a good indication of how to prioritize growth initiatives. In some cases, after the analysis, management may even boldly suggest a company should not pursue growth, but sell out.

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The essential questions are:

- Can the Existing Operations generate sufficient cash?
- Is the firm's cost structure competitive?
- What new competitors, technologies, or regulations may change the game?

Various Situations

Many firms do not have satisfactory endeavours in all segments as shown in the table below; this looks at several types of firms in terms of satisfactory ("S") and unhealthy or non-existent ("U") activities in each segment. We have also indicated positive (+), negative (-), or negligible (o) Free Cash Flow. It is based on our experience of a fair number of years and on a fascinating book, "The Alchemy of Growth" by three McKinsey partners, which formalized this approach.

	Existing Operations	**Emerging Activities**	**Future Opportunities**
Successful Firms	S +	S -	S o
Turn-arounds	U -	U -	U o
Obsessed with Growth	U +	S -	S o
Running out of Steam	S -	U -	U o
Start-ups	U o	S -	U o
Inventing a New Future	U -	U -	S o
New Ideas Not Businesses	S +	U -	S o
Failing to Seed Prospects	S +	S +	U o

In looking at a company, the first, and one of the most important things to do is to understand its position in each segment and the generation and absorption of its cash flow.

Traditional Approaches to Valuation

A number of methods have traditionally been applied to value the assets and shares of businesses. These can be divided into two basic approaches: Transaction or Investment. Transaction (or Market) Based Values, using comparisons with actual sales, are preferable, because they reflect real rather than notional markets; however, as the necessary information is often difficult to obtain, Investment Based Values are normally adopted.

In establishing Investment Based Values, there is no single standard or specific formula for any of the methods used; the factors to consider will vary in each case. Generally, for privately-owned or closely-held companies, both earnings and asset based methods are employed, while publicly traded shares rely principally on earnings.

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Transaction Based Value

To establish a Transaction Based Value, available information about actual transactions is used; these may be the sale or purchase of a portion of the business, any sale of its shares, and sales of shares or assets of comparable businesses. With over 2,000 quoted companies in Canada and 10,000 in the US, publicly traded comparables can usually be found. Several organizations in the United States maintain databases of private transactions in numerous industries. Data from other businesses, even if related, may need to be adjusted to give applicable results.

Net Income Value

The most common earnings based method involves normalising the pre-tax profits of a company to adjust for: non-operating income and expenses, such as investment transactions; sales of assets; and any extraordinary items, as for instance losses due to strikes. Normalized profits for the past few years, and projections for at least the balance of the current year and preferably the next two, are averaged to give an amount sustainable over the business cycle.

Finally, income tax is deducted, to establish Sustainable Net Income. This is then capitalised at a figure that reflects the general level of interest rates, the nature of the enterprise, perceived risks and expected growth. Investments, holdings in affiliates and available tax losses are added for the Net Income Value, while additional capital required is deducted.

Discounted Cash Flow Value

Another earnings based method determines the present value of the future cash expected to be provided by the business. It is based on projections of revenues, expenses, financing, debt repayment and capital expenditures. The projected cash generated in each period is discounted at a rate that reflects current yields, the specific risks, and a provision for the uncertainties inherent in long term projections. The sum of the present values to infinity is the Discounted Cash Flow Value.

In theory, the Discounted Cash Flow Value is the preferable method, as it is totally forward looking and considers the sources and uses of cash, the life blood of any business. In practice, long term projections are very difficult to prepare accurately, as conditions and risks will change over time. Therefore, when using the Dis-counted Cash Flow Value, it is customary to project operations for a limited period, up to five years, and then add a Terminal Value to the final year's projected cash flow before discounting.

The Terminal Value is normally estimated by one of the following approaches: capitalization of the Net Income of the final year of the projections; discounting that year's projected cash flow over the balance of the economic life, not more than twenty years, of the company's products or processes, or the final year's projected Book Value. All those involve projecting the future sales

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and pro-fits of the business, which depend on the economic outlook, decisions by management and actions of competitors.

First Chicago Method

When the value of a firm, as is the case with most high-tech and Internet investments, is mainly dependent on a Business Plan and Financial Projections, the "First Chicago Method" of determining the Net Income Value is often used. This looks forward three to five years, and establishes a future value by capitalising the projected Net Income at that time.

Usually, three different "Outcome Scenarios" are considered: "Success", "Survival" and "Failure". Success is normally the Business Plan, Survival is based on modest growth, while Failure implies a continuation of the status quo. Though some may not consider this an absolute failure, it would be a negation of the growth prospects expected from high-tech. The amount for each Scenario is then adjusted to its "present value", weighted by the probability for the Scenario and added together. The required additional capital is deducted to give the Net Income Value.

This method is the Discounted Cash Flow Value, with no cash being received during the period and a range of Terminal Values.

When dealing with a highly uncertain situation, such as Emerging Activities, many valuators use sensitivity analysis. This changes key variables in the financial projections to result in "what if" answers. CVS prefers to work with management and generate plausible scenarios for Alternative Futures; only for firms producing commodities subject to speculative price changes do we adopt sensitivity analysis.

Net Worth/Goodwill Value

Valuation theory puts greater emphasis on earnings based values than on asset based values, since benefits from any investment usually come from the future income generated by it. However, asset based values should always be taken into account. The Net Worth/Goodwill Value is the total of the tangible and intangible assets, less the liabilities, all at current values.

For this, the Book Values of a firm's tangible assets and liabilities are adjusted to reflect their current, usually going concern value. This is generally the price for which their function could be replaced, considering their age, condition and technology. Capital assets, especially land and buildings owned for a significant period, may well have values that differ considerably from their depreciated Book Values. When assets are restated, adjustments must be made for any related tax liability.

Intangible assets, such as patents, trademarks, brand names, real estate leases, licenses, franchises, trained workforce, etc., are normally either not recorded in the Financial Statements or shown at

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nominal values. All such Identifiable Intangible Items are also restated at an appropriate value, with full provision for related income taxes. Some Identifiable Intangible Items, for instance real estate leases, can give rise to a net liability. In such cases, provision must be made for the probable loss after the related tax saving.

Under Generally Accepted Accounting Principles, only purchased goodwill is recorded on the Financial Statements, usually relating to past acquisitions; development costs of a new product or pro-cess may also be shown. In either case, these amounts are recorded at cost less grants, tax credits and amortisation. For valuation purposes, they are replaced by effective goodwill. This normally depends on a company's proprietary technology or know-how as well as its profitability.

Where proprietary technology or know-how is important, the effective goodwill tends to be related to total development costs incurred, whether expensed, reimbursed or capitalised. In other circumstances, one common approach is to estimate the effective goodwill by capitalizing the "excess earnings"; these are the portion of Sustainable Net Income derived from the non-identifiable intangible assets.

Valuation Approaches for the New Economy

In the Appendix, "THE DIGITAL (NEW) ECONOMY", we describe the Internet as the "Railroads of the Twenty-first Century". One hundred and fifty years ago, at the height of the railroad booms in Europe and North America, investors did not understand railroad companies. In many cases, the shares fluctuated enormously and the industry caused numerous stock market "crashes". Many railroad companies failed; others gradually consolidated into the nine Class I systems that today dominate many aspects of North American transportation. Yet shrewd analysts, such as John Moody, the founder of the bond-rating firm, were able to develop methods to value the securities of these enterprises.

Today, in a much more sophisticated and better regulated world, there are techniques that allow the valuation of virtually every type of business. The following table sets out the valuation approaches for each of the three segments of corporate activity, indicating which are appropriate ("A").

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	Existing Operations	Emerging Activities	Future Opportunities
Traditional Approaches			
Market			
Transaction Based Value	A	A	
Earnings			
Net Income Value	A		
Discounted Cash Flow Value	A		
First Chicago Method		A	
Asset			
Net Worth/Goodwill Value	A		
Modified Approaches			
Other Multiples		A	
Adjusted Present Value		A	
Equity Cash Flow	A		
Additional Approaches			
Real Options			A
Economic Value Generated	A		
Non-Financial Data	A	A	

Existing Operations

The most common method of valuing Existing Operations is the Net Income Value. In many cases, it is the practice to use actual Earnings Per Share rather than Sustainable Net Income, together with a Capitalization Rate obtained from traded securities. As a result, the Net Income Value is often a hybrid between the Earnings and Market approaches.

This is not satisfactory, especially for a "growth company". It confuses the three segments by combining the Existing Operations with the Emerging Activities and ignores the Future Opportunities. It is absolutely essential for any realistic results to isolate each segment and value it separately.

For Existing Operations, depending on the expected economic life, the choice is between capitalizing earnings or discounting cash flow. In our view, because of its simplicity and the ability to build a factor that reflects modest growth above inflation into the Capitalization Rate, we prefer the Net Income Value. In either case, the Net Income must be adjusted to remove all costs and revenues pertaining to the Emerging Activities and the R&D expense related to Future Opportunities.

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In establishing the Capitalization Rate, valuators normally look to the "Equity Premium"; this is the excess of the rates of return on publicly traded shares over those on government bonds. Traditionally, the longest possible term has been used; in the United States, the available series runs from 1926 to the present. How-ever, as securities regulations and corporate governance have improved greatly over the past seventy years, we only use data going back to 1951, when war time controls were eliminated.

Emerging Activities

The Emerging Activities in any business involve a large number of uncertainties. No matter how hard management tries, it is not possible to produce budgets or financial projections that will accurately reflect the results of the next year, much less two or three years in the future.

Therefore, we consider it absolutely essential to produce a number of scenarios for Alternative Futures; we found a minimum of three and a maximum of five to be most practical and enlightening. These will not be the typical "most likely", "best case", "worst case" versions of the Income Statement commonly used in budgeting, but complete sets of financial projections, reflecting, in detail, the effects of various assumptions relating to the underlying business.

The value of each scenario will normally be obtained by the Adjusted Present Value ("APV") Method. This is an updating of the traditional DCF Approach which segregates the operational and financial components of the value and analyzes them separately. This is preferable to using a single discount rate, commonly the WACC (Weighted Average Cost of Capital) that bundles the financing and tax effects into a single number, implicitly assuming an optimal capital structure.

The first step in valuing an Emerging Activity is to calculate the APV of the cash flow for each scenario as if it were completely financed with equity, using either the cost of capital to the company, or to an equivalent, unlevered enterprise, as the Discount Rate.

The second step is to look at the present value of the Tax Shield generated by any Capital Cost Allowances (tax depreciation), together with the interest effect of the portion of the Working Capital or other assets, such as real estate, supplied by debt. This is likely to be low or zero in the early years, but may be significant in establishing the Terminal Value. Other factors to be considered in this step are any grants or subsidies, as well as investment or R&D tax credits. The APV of a scenario is the total of that of the Equity plus that of the Tax Shield; the latter normally uses a much lower Discount Rate due to the relative certainty of it being able to be applied to profits from Existing Operations.

When the APV method is used to value potential acquisitions, significant debt may be involved: the Tax Shield should also reflect the changing capital structure over time, the costs of "potential financial distress", as well as financing costs.

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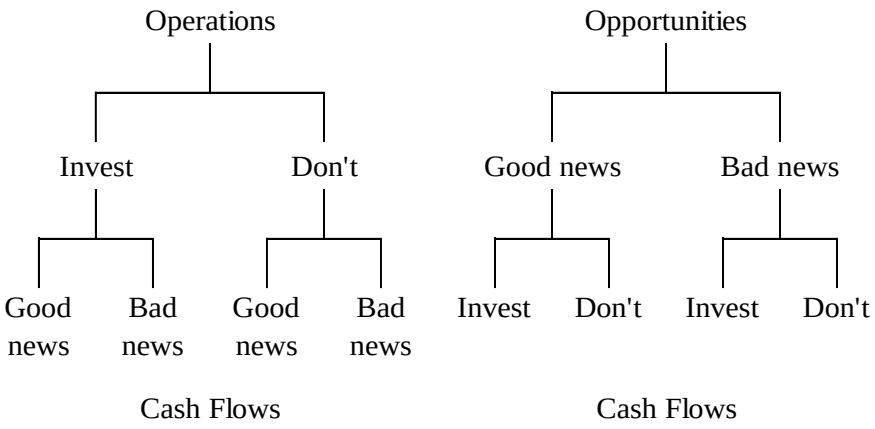
After establishing the APV of each Alternative Future scenario, the third step is for management to estimate their probabilities. With three scenarios, it is relatively easy to produce high and low ranges, but with five, it can become extremely difficult. The final step is to multiply each APV by its probability and add them together to give the value.

Future Opportunities

Opportunities are possible future operations, but with a major difference. With operations, management makes decisions and then finds out what happens; traditional valuation methods are designed for this sort of problem. When it concerns opportunities, management must endeavour to find out much of what will happen before major decisions are made.

For example, establishing an R&D budget involves informally valuing opportunities. Current spending on a particular project will not create any cash flow, but ensures the opportunity to make a further investment later, depending on how things look at that time. Traditionally, opportunities have been valued implicitly by being included in the growth rate of the Existing Operations. Only when they have matured to the point where the investment can no longer be deferred, do they join the queue of projects awaiting funding. Often champions arise to promote and defend opportunities they regard as valuable, resulting in such "strategic projects" being assigned a lower "hurdle rate" than routine investments.

The following diagrams, based on an article by Timothy Luehrman in the Harvard Business Review, May 1997, demonstrate the difference.



The right to start, modify or stop a business activity at some time in the future is different from the obligation to operate it now. The crucial decision to invest or not will not be made until some uncertainty is resolved or time runs out. In financial terms, this is analogous to an option which gives the holder the right, but not the obligation, to buy (call) or sell (put) something at a specified price on or before a future date.

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A call option on a share may grant the right to buy for, say, $100 at any time within the next year. If the share trades at $110, the option is worth more than the $10 "in-the-money" amount, as it has substantial leverage participating dollar for dollar with the share if it rises. If the share trades at $90, the option is still valuable, because it does not expire for twelve months and during that period the price may well exceed $100.

The phrase used about Corporate Opportunities "if R&D proves that the concept is valid" is analogous to "if the share price rises in the next few months", while "we'll go ahead and invest" is similar to "we'll exercise the option".

Valuing options in the financial industry is a complex matter as traders want the "right answer" before making a transaction. In valuing Future Opportunities within a company as "real" options, the objective is to get as close to the truth as possible without becoming too fancy.

Example of Real Option Value

Expressing an Opportunity in the form of a Real Option can give a more realistic value for a high-tech start-up. Such firms have negative cash flows from R&D and marketing in the first few years, during which they will likely find staff, obtain customers, select programs and systems and build a plant. Thereafter, they obtain sales and - hopefully - profits. Traditionally, the DCF Value is used with a lower discount rate for the negative cash flows in the early years. In practice, management has the option, not an obligation, for further spending. If at the end of the first year the technology proves unsatisfactory or the market weaker than expected, the next year's outlays can be deferred or abandoned.

For example, an entrepreneur wishes to establish a digital switch manufacturer. A traditional DCF analysis indicates a value of $10 million. In the first two years, the company will: assess the market, design & test the equipment, hire key managers, sign up suppliers and establish distributors at a cost of $1.2 million. At the end of the period, a decision must be made whether to build the manufacturing plant at a cost of $6 million or sub-contract production. That decision will depend on the situation at that time, which may result in a value different from the $10 million of to-day. Assume guideline (comparable) companies have a 25% cost of equity and annual share price volatility of 45%, what is the value of this project today?

Conventional DCF techniques produce a negative value of $420,000; this implies that the enterprise should be abandoned, saving start-up funds. However, the decision to build a plant at the end of year two is, in effect, a "call option", to be exercised only if its cost is less than the market value at that time.

In two years, the value of the Opportunity will be $6,400,000 ($10,000,000 discounted at 25% for two years) compared with the $6,000,000 estimated cost of the plant. Therefore, at that time, it

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would be in-the-money by $400,000. Using the most common Option Pricing Model (Black-Scholes), the ability to wait for two years before making a second investment decision has a value of $2,000,000. To purchase this requires the commitment of $1.2 million today, giving a Real Option Value of $800,000 for the enterprise.

Other Multiples

Today, in the software industry, Capital Expenditures in the form of R&D is written off as incurred, a practice that is accepted by both Revenue Canada and the IRS. The same is true for many Internet companies, where enormous amounts are spent on marketing to create the "Customer Base", which is a significant "Capital Asset". In both cases, substantial losses are the result.

The following table shows the various profit levels of a business:

	Sales	
Less	Cost of Sales	
	Gross Profit	
Less	SG&A Expenses	
	Operating Cash Flow	(EBITRAD)
Less	Research & Development	
	Business Cash Flow	(EBITDA)
Less	Depreciation & Amortization	
	Operating Profit	(EBIT)
	Interest	
	Pre Tax Profit	(EBT)
Less	Income Taxes	
	Net Income	

When there is no bottom line to which a multiple can be applied, many financial analysts have turned to higher levels such as: Sales, EBITRAD, EBITDA, EBIT and EBT. Of those, the most common is EBITDA, which is related to Enterprise Value ("EV" = the total of all debt and preferred shares at book value, plus the common equity at market value).

One application of the EV/EBITDA Ratio is shown below, which com-pares, on a simplified basis, Rogers Communications with Inco. It demonstrates that, when expressed in those terms, exaggerated Price/Earnings Ratios become at least comprehensible numbers.

$million	**Rogers**	**Inco**
Net Income	(100)	50
Per Share	$ (0.55)	$ 0.33
Depreciation	500	200
Interest	400	150
Income Tax	-	20
EBITDA	800	420
Debt at Book	5,000	2,000
Equity at Market	4,000	5,000
Total Enterprise Value	9,000	7,000
PER	na	100
TEV/EBITDA	11.3	16.7

In valuing software companies, we prefer to go one step up the chain and use EBITRAD, which also adds back R&D, in that industry a capital item.

From a strategic point of view, management of e-commerce companies are right to keep spending on marketing, even though this results in accounting losses. E-Commerce is still in its infancy and its rapid growth is showing little signs of slowing down. The general view is that businesses which are the first to move into a market and spend enough, capture the most customers at the lowest cost and manage to keep them.

Even though the Internet has speeded up many activities, it takes time to build a real business online. From its founding in 1985 until 1996, AOL did not make a profit. Now, with only reasonable earnings and a multi-billion dollar market capitalization, it is in the process of merging with Time Warner, the world's largest media company, to which the market has given a lower value. The big question is how long e-commerce companies should "investment spend" on marketing and accept the deferring of profits.
Based on our three-segment model of business activity, Existing Operations should be encouraged to become profitable after two to three years, with the funds being allocated to Emerging Activities. Future Opportunities may take up to ten years to yield results.

Equity Cash Flow

Usually in valuing a company one asks the question "What is this bundle of Operations and Opportunities worth?" Sometimes, in particular when companies participate in joint ventures, partner-ships or strategic alliances in which they share ownership of the activity with other parties, another question has to be asked. "What is the value of an equity claim on this bundle of Operations and Opportunities?"

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In valuing such enterprises, it is necessary to establish not merely the value of the activity as a whole, but, in particular, that of the company's interest. The straight-forward way to value this is to estimate its share of the expected future cash flows and then discount them at an appropriate rate. It is often referred to as the Equity Cash Flow (ECF) approach and is analogous to the "cash-on-cash" return used by real estate appraisers.

In this, both the cash flows and the discount rate differ from those of the traditional or APB approaches. The cash flows must include all fixed charges, such as interest and principal payments, and the discount rate reflect the effect of the financial leverage.

When financial leverage is high, the shares of a firm are effectively a call option on the business. If the business is successful, managers "exercise the option" by repaying some of the loans. If it runs into trouble, the firm will be reorganized and the shareholders receive something for the tax losses which remain in the shell. Under these circumstances, the use of an OPM is not practical, as highly levered equity is in effect a complex sequence of related options, including options on options.

Economic Value Generated

This approach is discussed in detail by John Ferguson as "Economic Value Added®". We consider EVG a management tool that:

- Measures the Owners' Benefits
- Accounts for the Cost of Capital
- Reduces Effects of Accounting Differences
- Reflects Creation or Destruction of Wealth.

Many large, well-known companies do not generate any economic value. Siemens, the international electrical/electronics firm, announced in 1999 that it would have a positive EVG by 2001! Poor shareholders!

Profits are earned when a product or service is sold for more than its total cost of production. Economic Value is generated when a business has a cash return that exceeds the total cost of the capital employed (often called the Capital Charge). The cash return is net revenue less: cash operating costs, maintenance capital expenditures and taxes paid on operating profits. The Capital Charge is the capital employed, multiplied by the desired after-tax rates of return.

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EVG applies to any operation; let's look at a convenience store, which is essentially a cash business:

$'000	
Sales	180
Cost of Sales	105
Gross Profit	75
Operating Costs	50
Operating Profit	25
Interest	5
Pre-Tax Profit	20
Income Tax	5
Net Income	15

If the prime rate is 6%, what return should we look for? Say between twice and three times prime, i.e. 12% to 18%; let's use 15%.

Things went well!

$'000	
Our Investment	60
Expected Return (15%)	9
Actual Return	15
Excess	6

We earned $6,000 more than expected, a 10% abnormal return. This is the Economic Value Generated by the business.

Brand Values

One objective of any business is to establish a brand name. Many brands, such as Coca Cola, Xerox, Kleenex, or Volkswagen are known throughout the world and have enormous value as they elicit recognition and encourage purchases. If given a choice between two similar items, consumers will choose the one with the name they re-cognize, even if it is more expensive.

Brand Equity is a set of assets (and liabilities) linked to a brand's name and logo that adds to (or subtracts from) the benefits provided by a product or service to customers. Brand Equity exists when customers are aware of the brand, loyal to it, and perceive it as denoting quality. Customer loyalty in purchasing a brand time and time again is the most important value in the name of a brand as it contributes to an even and predictable income stream.

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Like nearly all assets, brands can be valued by the three traditional approaches: Cost, Market and Income. However, in certain cases, such as whiskey, it is almost impossible to separate the value of the brand from that of the aged inventories required to produce it; without the inventories, the brand would not be the same, whereas the stocks on their own would have to be sold at fire sale prices.

The Cost Approach, which sums up the present value of all past expenses incurred to create the brand is intuitively appealing. However, in the case of some entrenched brands, the result may be unreasonable and even exceed the Fair Market Value of the entire company. Estimating the cost of recreating the brand is not usually possible.

The Market Approach focuses on transactions in brands. Unfortunately, there is very little data of this type in Canada, and not much in the United States. Sometimes one can identify a comparable brand, such as another type of whiskey that has been involved in a recent transaction, and use it as a proxy.

For the Income Approach, a combination of the Discounted Cash Flow and Net Income Approaches is used. In it, the Free Cash Flow is established for each year; then the return that can be ascribed to each category of identifiable physical or intellectual assets is subtracted. The residual earnings are treated as resulting from the brand itself. The present value of these annual amounts is generally estimated for five years, with a Terminal Value based on a continuation of the growth in perpetuity. The Discount Rate selected is usually based on similar brand transactions and is normally between 15% and 20%.

Non-Financial Factors

A number of studies, including one in "Measures that Matter" by Ernst & Young in 1999, have demonstrated that "non-financial factors can be used as leading indicators of future financial performance", and, when such factors were taken into account, earnings forecasts were more accurate, reducing risk. Some important non-financial factors are:

- Quality of Management
- Effectiveness of Product Development
- Market Share
- Brand Image
- Management Credibility
- Quality of Products & Services
- Ability to Attract & Retain Qualified People
- Customer Satisfaction

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The PEG Ratio

In establishing appropriate Capitalization Rates or their more common reciprocal Price/Earnings Ratios ("PER"), the most important single factor is probably the growth rate. The PEG ratio, obtained by dividing the PER by the growth rate, is used by financial analysts to compare the relative "expensiveness" of shares.

The following table looks at four "growth stocks", two US and two Canadian; it shows that when growth is rapid, a three-figure Price/Earnings Ratio, such as that of JDS, may not result in an "expensive" stock in two years' time.

		Growth		2 Years Forward
	PER	**Rate**	**PEG**	**PER**
Coca Cola	40	8%	5.0X	34X
Microsoft	80	35	2.3X	44X
Nortel	90	25	3.6X	57X
JDS	120	80	1.5X	37X

Growth v Value

As mentioned previously, investors often divide publicly traded shares into Growth or Value stocks. One use of PEG is to compare the estimated "target prices" in two years' time of a Growth and Value stocks. For convenience, each has current EPS of $1.00. The Growth stock is expected to be worth 3.6 times the Value stock.

	Base	Growth	Target	Effect	Share Price
Economy	**EPS**	**Rate**	**PEG**	**PER**	**End Year 2**
New	$1.00	20%	1.5	30.0	$43.20
Old	$1.00	10%	1.0	10.0	$12.10

Caution

It is essential to apply a "smell test" to all valuations. To demonstrate the improbability of some valuations, John Kay, a Director of London Economics, in an article in the Financial Times, uses the example of "C.com", a world leader in a growing market, which by 2010 is expected to have an annual volume of US $500 trillion.

If C.com can maintain its current 5% market share and earn a 1% net margin in that year, its prospective annual profit will be US $250 billion. Assuming a market growth of 5% thereafter and a 10% Dis-count Rate, the present value of C.com is US $5,000 billion, ten times that of Cisco, Microsoft or GE.

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C.com is actually a real business, the foreign exchange trading operations of Citigroup, which, including all other banking and insurance activities, is valued at about US $170 billion. There are two problems with such a value for C.com: the first is mindlessly projecting trends, "a trend is a trend, but must always end"; the second is that, over time, margins "revert to the mean".

Reality Checks

The final item in this paper describes two reality checks we have found useful. The first is the "Q" ratio, which was developed by Nobel Prize winning economist James Tobin. The second is to determine the implicit discount rate between the current and future values of a share.

The "Q" ratio measures the relationship between a company's Market Capitalization and the cost of replacing its physical assets. The importance of knowledge to software companies is shown by their high "Q" ratios of seven-to-one or more. Old economy companies, such as those in the forest products industry which is dominated by plant, equipment and, in the United States, large amounts of privately owned timber, have "Q" ratios of around one-to-one.

Some years ago a Canadian steel company with a capacity of 400,000 tons a year was accorded a Net Income Value of $700 million by a major accounting firm, using a PER of 14.6X, based on comparable companies listed on the TSE. Adding the $100 million of debt resulted in an Enterprise Value of $800 million, or $2,000 per ton of capacity.

At about the same time, another steel company was increasing its output by 140,000 tons at a cost of $50 million, or $357,000 per ton. Using this figure, the steel company being valued, had a "Q" ratio of 5.6X, a level more common for technology companies, suggesting that the original valuation should be reviewed.

Conclusion

In purchasing shares of a company, whether for portfolio or acquisition purposes, it is essential not to overpay, even if the "currency" is "over-priced" shares. In this market, many commentators believe that share prices, even though between willing buyers and willing sellers, no longer represent Fair Market Value.

Two hundred years ago, when the New York Stock Exchange was established, diversified US investors might have owned a cotton plantation with customary slave labour or speculated in the construction of a canal, which then was one of the symbols of the new economy. Today, such investments are worth very much less than they were at the time, adjusted for inflation.

Recently, the Globe and Mail quoted a number of analysts comparing the boom in Internet and other high-tech companies to the Dutch "tulipmania" of the early 17th century. In our view, this is nonsense. Unlike the Internet, tulips, apart from their visual beauty, contributed nothing permanent

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to the economy. They made some blokes very rich and drove others to suicide. The Internet, however, as pointed out previously, is likely to have a continued, drastic and long-lasting effect on the way business is done in many industries.

In light of the changes that have taken place in the forty years I have been involved in valuing businesses, by the year 2050, the stock market will likely be dominated by companies that do not even exist today. Currently, we believe that the long term is about five years, and that Capitalization Rates of less than 3% (a 33X Price/Earnings Ratio) cannot be justified for many businesses.

We hope that this brief presentation has helped you understand some of the expansions and modifications of traditional valuation approaches now being introduced to deal with rapidly changing business situations; others will undoubtedly evolve in the future. To demonstrate how some are used, we have prepared the following Case Study on the valuations underlying the sale of a real Canadian software company. There are also three Appendices on the Internet that may be useful.

As always, I will be delighted to answer questions, even after the course if you are prepared to wait a couple of days for me to call you back - clients take precedence! Please don't use e-Mail; we get about 150 a day and therefore replies are slower than to phone or faxed requests.

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CASE STUDY - JOINER INC.

While most valuators looking at software companies rely on the Discounted Cash Flow Value, this Case Study demonstrates how a Net Worth/Goodwill Value and a Transaction Based Value were developed for a small Canadian software company. They are the actual figures used to establish a reasonable selling price when Joiner was acquired by Microsoft in June 1997.

The Company

Joiner was doing very well; its principal product, Directory Ex-change, which allowed the inter-communication of disparate e-mail systems, had spurred revenue growth from $409,000 in the first quarter of fiscal 1997 (year-end May 31) to $1,318,000 in the third quarter. In March, sales for the last quarter were forecast at $2,000,000, based on orders on hand, resulting in at least $4,921,000 for the year. At these sales, even though R&D was at an annual rate of $1 million, the firm was profitable.

At the pre-tax level, the Company had moved from a loss of $306,000 in the first quarter to a profit of $227,000 in the third; for the last quarter, the projected profit was $775,000. In February, deals had been entered into with Amdahl, a subsidiary of Fujitsu and Digital, giving Joiner's products 24/7 support virtually every-where in the world.

Approach by Microsoft

In mid-March, Microsoft approached the Company, offering US $16 million. At that time I prepared the memo set out below (names changed), suggesting a value to Microsoft of US $34 million.

Outcome

The business was sold in June 1997 to Microsoft for US $30 million, 88% of the US $34 million value to that firm established in my memo and confirmed by the New York investment banker who negotiated the deal. A summary of their analysis will be found following my memo.

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March 18, 2000

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COPY : Venture Capitalist
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FROM : James P. Catty

TOTAL PAGES: 5

Re: Value of Joiner to Microsoft

Following our discussions this morning, I am setting out my views of the value the acquisition of Joiner has to Microsoft. All amounts are in US dollars, unless otherwise stated.

It appears that IBM considers Notes to be a strategic vehicle, not only as a messaging mechanism, but also as a means of distributing mainframe data and applications. They are quoted as having 1,000 programmers dedicated to converting PROFS applications to Notes at the rate of about 100 to 200 per month.

From a strategic point of view, the acquisition can give Microsoft four advantages:

1. "Notes Containment" An acquisition would immediately add a tested Notes/Exchange connector and Notes/Exchange Directory Synchronization capabilities to Exchange, in time for Version 5.5 in September 1997. Migration tools for Notes applications, using these technologies, will be available in three months.

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There is no doubt that Microsoft could build all of these and successfully roll them out. The question is how long it would take, including testing, and how many seats of Notes, rather than Exchange, would be sold in that period.

In my view, as development must, in part, be sequential, it would take Microsoft at best twelve and probably about eighteen months to have all three products fully tested and commercially available. In the same period, Joiner could roll out at least two upgrades of all of them.

Currently, Notes has about nine million seats, compared with around two million for Exchange. In the next year, Notes expects to add another six million seats. With full Notes connector capabilities integrated into Exchange Version 5.5, Microsoft should have a reasonable chance of obtaining 50% of these seats. For this analysis, I have used 25%, or 1,500,000 additional seats of Exchange.

A further potential market for Microsoft, with Notes capabilities integrated into Exchange Version 5.5, is represented by the many users of Notes as a Mailer rather than a Workgroup product; these are estimated at two-thirds of the total In-stalled Base. With the better mail transport of Exchange, and Joiner's calendering ability, available through its license to use the Attachmate software recently acquired by Control Data Systems, it is likely that a large number of existing Notes Mail users would like to convert to an Exchange backbone; my estimate is 1,000,000 over time.

Thus a "Buy" rather than "Build" approach gives Microsoft the potential of selling a further 2,500,000 seats of Exchange, which otherwise would go to Notes, as a result of the much faster time to market. Using an average revenue of $40 per seat, this opportunity could generate $100 million in potential revenue for Microsoft, and create at least a $10 million value for Joiner.

2. "Plucking the Low Hanging Fruit" There are more than 40 million seats of host-based mail systems looking for a migration path.

   Some of these enterprise systems are mainframe-based and some are LAN based; all are candidates for Exchange. However, Microsoft considers itself a "shrink wrap" company without the capability of supplying service at the level expected by "glass house" operations. Recent agreements with Digital and Amdahl (pending) will supply Joiner products with 7/24 service capability throughout the world.

   Joiner has already built connectors for nearly all of the host-based systems so that they can co-exist with and migrate to Exchange. By integrating these and the Directory

Synchronization capability into Exchange Version 5.5, Microsoft could outflank IBM, as that firm must rely on Soft-Switch to integrate any orphan (non-IBM) systems into Notes.

Over the next two years, this capability has the potential of adding between 16,000,000 (40%) and 24,000,000 (60%) seats of Exchange. Using the minimum, and ascribing a value of only $1.00 per potential seat, this opportunity adds $16,000,000 to the value of Joiner.

The first two strategic advantages give a value of $26,000,000 for Joiner:

$'000	
Notes Containment	10,000
Low Hanging Fruit	16,000
.	26,000

There are also two other medium to longer term strategic ad-vantages of an acquisition: "Soft-Switch Displacement" and "Application Distribution".

3. "Soft-Switch Displacement" An integral part of IBM's emerging strategy is the use of Soft-Switch installations for linking disparate mail systems. At present, there are about 700 of these, with 400 using technology licensed from Joiner.

   Recently, Joiner has started developing software running on NT platforms that handle all the Soft-Switch functions including those in the Soft-Switch ATK (Application Tool Kit) Utilities. These capabilities should be available in three months.

   Many companies find Soft-Switch installations difficult to manage as they run only on Data General platforms and would like to replace them with Joiner Software Systems on an NT platform that also runs Exchange on the same server.

   Installation of such Systems would be undertaken by system integrators. Based on a retail price of $100,000 ($60,000 to Microsoft) and replacement of 350 (50%) Units, the potential revenue is $21,000,000; this should add $2 million to the value of Joiner.

4. "Application Distribution" IBM has positioned Notes as a data and application distribution mechanism. This creates an opportunity for Microsoft to replace IBM 3270 terminals with PCs and BackOffice.

   For Texaco, Joiner is developing an NJE Connector that will allow Host Applications to be distributed by Microsoft Ex-change Server. NJE is embedded in every IBM native host operating system. Once Joiner replaces Soft-Switch's ATK (see item 3), all components

required to link IBM hosts to Exchange Server will be available to Microsoft on an Acquisition.

Conservatively estimated, there are 5,000 installations using mainframe applications; over time, about 25% could switch to Microsoft Exchange distribution facilities. This type of software is sold through system integrators and would retail for about $200,000, of which $100,000 a copy would come back to Microsoft. For 1,250 installations, this represents a potential $125 million in longer term revenue.

In my view, the Value of Joiner to Microsoft is $34 million, made up as follows:

	Potential Revenue Seats of Exchange	**Value** $'000
Notes Containment	2,500	10,000
Low Hanging Fruit	24,000	16,000
	26,500	26,000
Soft-Switch Displacement	21,000	2,000
Application Distribution	125,000	5,000
	146,000	33,000
Cash		1,000
		34,000

Comparables

The best comparables to Joiner among public companies are World-talk, with a market capitalization of about $80 million, and the smaller ISOCOR, at $41 million.

Worldtalk is about 2.9 times the size of Joiner, with December 1996 revenues of $14.2 million, compared with Joiner of $4,900,000 (May 1997). Worldtalk has a better distribution system but its products are considerably inferior; in fact, they rely on certain technologies licensed from Joiner. On a comparative sales basis, Joiner is worth $27,600,000. Adding a 20% control premium and the $1 million of cash gives a takeover value of $34 million.

While having a smaller capitalization than Worldtalk, ISOCOR is bigger than Joiner, with sales about the same as Worldtalk. It uses OEM distribution, resulting in lower margins. In our view, ISOCOR is worth only about 20% more than Joiner, as it does not have any similar strategic products. The major reason for the premium is that ISOCOR is a public rather than a private company.

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Opinion of the Investment Banker

Joiner engaged a New York investment bank that specialized in acting for software companies, as an intermediary. In April, that organization came up with $33,500,000, based on 1996 acquisition prices; it also used a publicly traded comparable, Worldtalk, which gave between $25,470,000 and $36,904,000, with a mean of $31,187,000.

1996 Acquisitions

		Per Share		$ million Price/
Buyer	**Target**	**Price**	**Revenue**	**Revenue**
Filenet	Soros	102.5	15.0	6.83
Integrated Systems	Epilogue	20.0	3.3	6.06
Worldtalk	Deming	6.3	0.5	12.60
Weighted Average		128.8	18.8	6.85

Applied to Joiner's trailing twelve month (TTM) revenues of $4,921,000, the weighted average Price/Revenue ratio of 6.81 times gives $33,512,000, rounded to $34,000,000 as the Acquisition Value.

Worldtalk Comparisons		**$'000**
	TTM	**Run-rate**
	3/31/97	**3/31/97**
Market Capitalization	61,974	61,975
Annualized Revenue	15,896	17,600
Price/Revenue ratio	3.90	3.52
Joiner Revenue to 5/31/97	4,921	8,000
Implied Value	19,186	28,170
Private Company Discount	15%	15%
Subtotal	16,308	23,945
Control Premium	50%	50%
Adjusted Value	24,462	35,917
Cash	1,000	1,000
Acquisition Value	25,462	36,917
Mean Acquisition Value Rounded	31,200	

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APPENDIX – A - THE NEW DIGITAL ECONOMY

A great deal has been written recently about the "New Economy" based on the fact that high-tech companies sell for "astronomical" price/earnings ratios, while those of "real" companies, those who supply the goods and services we need for a pleasant life trade at single digit multiples. Commentators have used this divergence to divide the world into the "new" and "old" economies.

We look at it from a different, more complex point of view: are industries knowledge or labour-driven? One of our elderly con-temporaries, Pope John Paul II, showed remarkable insight:

Whereas at one time the decisive factor of production was the land, and later capital, today the decisive factor is increasingly man himself, that is, his knowledge.

A US economist agrees with the Pontiff, and has done so for over thirty years: in 1962, Fritz Machlup concluded that 34.5% of US GNP could be allocated to knowledge industries; in 1977, another researcher, Mark Porat, raised that figure to 46%. Today, we believe that about 60% of the US GDP relates to knowledge activities. Yet studies since 1989 suggest that most businesses, under normal conditions, use or take into account only 20% of the knowledge available to them.

Unlike Plants & Equipment, Intellectual Capital, which includes the knowledge base of the firm, is only reflected on its Financial Statements when it has been acquired from outside the organization.

Intellectual Capital

The term "Intellectual Capital" includes three elements: Human, Structural and Relational. Human Capital is a stock of knowledge that exists at the individual level in an organization. Since it resides permanently in the minds of employees, it is difficult to codify and transfer.

Structural Capital is the knowledge left behind when the employees go home. It covers the mechanisms, systems, procedures and culture that support employees in carrying out their tasks. Much of this is reflected in the Information Technology ("IT") systems that help turn individual know-how into group knowledge.

Relationship Capital covers customer and supplier relationships, knowledge of market channels and competitor activity, together with an understanding of the impact of government or other bodies. Most managers have great difficulty, often due to severe time restraints, in drawing on the wealth of knowledge held by their clients and suppliers. Building a relationship of trust and sharing information often leads to greater productivity.

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Many of the differences between the market capitalizations of high-tech and traditional industrial companies can be explained by the amount of Intellectual Capital involved. One of the greatest examples of the power of Intellectual Capital is the Internet.

The Internet

September 28, 1999, was the 30th anniversary of the first link of the Internet's predecessor, the "Arpnet", which connected the computer labs of the University Of California at Berkeley and Stanford Research Institute in Palo Alto, California. The Internet's present stage of rapid growth resulted from the development of browsers in 1994 that allow easy surfing of the World-wide Web, which was created in 1990.

In June 1998, the Internet was described as an "ecosystem", com-prising thirteen tetrabytes (one billion billion bytes) of data, nearly as much as the US Library of Congress, which contains around 20 tetrabytes. In the two years since then, there is good reason to assume that the Internet more than quadrupled in size and is now about three times as big as the Library.

Railroads of the 21st Century

CVS believes that the Internet will change many of the ways business is done in North America even more rapidly than so far. To quote Andy Grove, retired Chairman of Intel: "In five years' time, all companies will be Internet companies or they won't be companies at all".

It's all happened before, and progress seldom comes without pain. In the middle of the 19th century, the railroads destroyed many traditional industries and created new ones, as the Internet is starting to do now. In particular, both the railroads and the Internet:

- Reduced price differentials between distant markets:
    - Recently, German exporters complained publicly about losing business to alternative suppliers, whose prices, listed on the Internet, were significantly lower.
- Speeded-up economic activity:
    - Stage coaches were much slower than railroads in delivering checks and transferring money. Now, banking transactions and product purchases may be undertaken any time.
- Consumed huge quantities of high performance products:
    - Railroads purchased immense amounts of steel, glass, copper and coal, as well as needing vast amounts of capital. The Internet is driving demand for increasingly powerful hardware and software. Intel may be considered the US Steel of today.
- Created mass consumer markets:
    - Modern, high volume retailers appeared after the Civil War, such as mail order merchandisers (Sears, Roebuck), grocery chains (A&P) and department stores (Macy's); each was based on a lower cost - modest profit, but high volume business,

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creating the mass consumer market. Many prominent Internet enterprises, such as Amazon.com, use a similar business model.

Classes of Internet Companies

CVS divides Internet companies into nine main classes:

- Equipment Suppliers, to whom the Internet is an important and growing part of their business.
- Backbone Operators transmit data around the world; most are publicly-traded telephone companies.
- Facilitators, such as Internet Service Providers, give Web access to individuals and companies; some of them also supply other services, such as Website hosting, Web page design and telephone capabilities over the Internet.
- Portals offer a broad range of information gathered from many sources, together with links to suppliers of goods and services. Mainly financed by advertising, this sector is dominated by public "brand name" entities.
- Virtual Retailers sell goods or supply services to firms and consumers. This category, which comprises most ".com" companies, has a mix of public and private firms.
- Marketplaces help buyers and sellers find each other, through auctions, "virtual agents" or by other means.
- Consultants assist organizations in becoming Internet-ready or acting for them in selling advertising; unlike Facilitators, they lack recurring revenue.
- Online Extensions add Internet activities to existing businesses, such as retailers.
- Software Publishers develop and distribute the software needed for the "Net" to function.

Economic Impact

The economic impact of the Internet is sometimes described as an oil shock in reverse. During the 1970s, the rapid rise in the price of oil contributed to inflation and pushed the world into recession. The Internet reduces the cost of information and so has positive economic effects, according to an article in The Economist magazine of April 1, 2000; this states that the Internet is moving the real economy closer to the text book model of perfect competition. The most important effect of the "new economy" may be to make the old economy more efficient.

In some industries low marginal costs and greater network participation effects result by increasing returns to scale and thus the emergence of "natural" monopolies. Because the Internet, in general, reduces barriers to entry, competition and efficiency are still likely to increase the economies as a whole. Goods bought on line, such as books and CDs, are on average about 10% cheaper after taxes and delivery than in conventional shops; this is forcing conventional retailers to reduce prices. More dramatic savings are available in banking, where a transfer between accounts costs $1.27 by a teller, $0.27 via cash machine, and only $0.01 over the Internet.

The biggest economic impact of the Internet seems likely to come from business-to-business (B2B) e-commerce, which is discussed in detail in the Appendix on "Internet Statistics". Goldman Sachs concludes that B2B e-commerce could reduce average prices by almost 4% in the five biggest economies (US, Japan, Germany, France and Britain).

As inflation is a monetary phenomenon, the Internet will have little effect on its level. If the rate of inflation declines because the Internet pushes some prices down, central banks will tend to reduce interest rates, which should allow faster growth. On the other hand, if prices of goods not subject to Internet activity rise faster than before, inflation will remain unchanged or may actually increase.

By boosting productivity, Goldman Sachs estimates that by boosting productivity, the Internet will cause a permanent 5% increase in the output of the richer economies, with more than half of this gain occurring over the next ten years; this implies a boost to GDP growth of more than 0.25% a year. In the last two decades of the nineteenth century, the railroads' ability to move freight cheaply added about 10% overall to US output. Computers, software, and communications now represent about 12% of the total US capital stock, about the same as that of the railroads at their peak.

Another positive factor is that prices of computers and telecommunications have fallen more quickly than for any previous technology, encouraging the rapid adoption of the Internet. There is always a significant lag before a new technology has a noticeable effect on productivity growth because it takes time to understand how to take advantage of new ways of doing things. The recent spurt in US productivity seems to be the payoff from the computer revolution which started 50 years ago.

The Federal Reserve Bank of Cleveland suggests that if rapid productivity gains reduce production costs, prices of manufactured items should be encouraged to fall, so that workers may benefit from higher real wages. If prices do not fall and nominal wages lag behind productivity gains, profits will increase and share prices may soar on the (false) expectation that profits will continue to grow.

Up until very recently, investors seemed to have unrealistic expectations about future profits. Faster growth and lower costs do not automatically justify higher share prices. In the longer term, reduced barriers to entry and increased competition are likely to squeeze profit margins and pass on most of the benefits to consumers. History shows that although the contribution of profits to GDP often rises during the early years of a technology-led expansion, as in the 1990s; later, this proportion tends to decline as a result of increased competition.

e-Commerce

e-Commerce includes four classes of Internet companies: portals, virtual retailers, consultants, and online extensions. In our view, it is more than sales over the Internet; we consider it is a process

that is redefining how businesses and consumers interact. It is opening new markets, creating communities of like-minded people regardless of location, and has five major effects on commercial activity:

- Shift power from sellers to buyers by granting direct access to price and product information, thus lowering costs by switching suppliers and diminishing the role of the middleman.
- Increase competition and lessen barriers to entry.
- Substantially reduce transaction costs for organizations that can take advantage of it by directly reaching customers.
- Lower profit margins, as everyone knows what everyone else is charging; purchasers, acting through "Internet agents", can choose the appropriate combination of price and service.
- Enhance the speed, range and accessibility of information, allowing sellers of products to profitably add services.

In 1999, e-commerce added nearly two-thirds of a percentage point to the United States GDP. Its significance is shown by the following comment from Lou Gerstner, chairman of IBM, in June 1999; he describes the new "dot-com" companies as:

> ...fireflies before the storm - all stirred up, throwing off sparks. The storm that's arriving - the real disturbance in the force - is when the thousands and thousands of institutions that exist today seize the power of this global commuting and communications infrastructure and use it to transform themselves. That's the real revolution.

That's a far cry from the pronouncement of a previous IBM chairman, who in the late forties said "even if we sell only eight or ten, we'll be able to advertise the fact that we have the world's first commercial electronic calculator." That's what they used to call computers, and actually, they sold about a hundred of that first model.

Jack Welch, chairman of GE, in the spring of 1999, declared that the Internet was the biggest force he had seen in a long career; his firm developed the Trading Process Network, enabling its suppliers to easily and quickly bid for GE component contracts. This system, which handles over $1 billion of transactions per month, has reduced procurement time by 50%, processing costs by 33%, and the price of goods purchased by between 5% and 50%; the average is 15%.

Advertising

Many Internet businesses are based on advertising. Jupiter Communications, a New York research firm, expects online advertising to grow to US $11.5 billion in 2003 from US $2.1 billion in 1998, for a compound annual growth rate of 40%, as shown in the following table:

US $'000 Million	1999	2000	2001	2002	2003
Advertising	$3.2	$4.7	$6.5	$8.8	$11.5
Growth	52%	47%	38%	35%	31%

Jupiter's research suggests that financial services, automotive and media will lead the spending rather than the traditional packaged goods. In 1999, online advertising revenue will surpass that of billboards and other outdoor; by 2004, the Internet is projected to rival radio as the fourth largest US media, ahead of magazines and yellow pages, but behind TV, newspapers and direct mail. In that year, worldwide online expenditures are anticipated to be $22 billion (8% of the total) for a 41% compound annual growth rate.

Online advertising in 1999 was mainly (72%) banners on portals. By 2001, according to e-Business Journal, 55% will be sponsorship, 26% banners, and 6% "Interstitials", which are little messages that pop up on the computer screen; the remaining 10% will be "something new". In that year, advertising revenues will not be spread as widely as they are currently, but are likely to go mainly to Websites that actually deliver viewers. At present, about 15% of online advertising is performance-based, with the rest charged at a cost-per-thousand click-throughs. By 2004, Forrester, a Boston based Internet research firm, expects the performance-based portion to rise to 50%.

Privacy

Online privacy has been the subject of skirmishes between the United States and Europe over what the European Union regards as a lax US approach. North American believes in self-regulation, while the Europeans have issued directives setting out legally enforce-able codes of conduct. This issue is central to the future of e-commerce. During the past year, both the media and government regulators on both sides of the Atlantic have paid increasing attention to the topic. As a result, customer concerns regarding this subject are definitely growing in the United States.

Despite the proliferation of "privacy protection policies", there is understandable concern that self-regulation is at best a partial solution. In June 1999, Jupiter Communications asked a sample of Internet consumers to identify "which of the following would con-tribute to your trusting a Website not to violate your privacy? (Choose three)." The factors and the ranking of the 2,015 responses were as follows:

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	%
Nothing-Do not Trust WebSites with Privacy	37
Site Posted a Privacy Policy	36
Site Posted a Third-Party Privacy Seal	27
Site has Off-line Presence	26
Site is Regulated by Government	14
Site Recommended by Friends/Family	9

These results show that, despite industry efforts, US consumer concerns remain unaddressed. Even with a posted privacy policy, 64% of the customers surveyed indicated that they were reluctant to trust a Website. Online advertising and e-commerce revenue are likely to decline, unless remedial action is taken. This would cause demands for extensive government regulation, similar to those passed in Europe.

Canadian Legislation

Bill C-6, the Personal Information Protection and Electronic Documents Act, received Royal Assent on April 13, 2000 and will be-come effective January 1, 2001. The Act will significantly affect every organization that collects, uses, or discloses personal in-formation in Canada. According to a recent statement by our Privacy Commissioner, the Canadian government has an average of 2000 items of information on every Canadian, which boggles the mind. But then, one English newspaper managed to fill thirteen pages with news about the new Blair baby, so what do I know.....

The purpose of Bill C-6 is to recognize an individual's "right of privacy", as well as businesses need to gain access and reasonably use such information. It applies to both online and other organizations that collect, use or disclose personal information in the course of commercial activities. Generally, the consent of the individual will be necessary. Also, a right of access to and correction of personal information must be provided and appropriate safe-guards must be applied. Compliance with the Act will be overseen by the Privacy Commissioner.

Initially, the Act will apply to the federally-regulated private sector, which may cover certain Internet Service Providers or other Internet activities. By January 2, 2004, all organizations using personal information for commercial activities will be covered, unless they have become subject to substantially similar provincial legislation; at present, only Québec has such a law.

Consumer Attitudes

In the fall of 1998, Jupiter Communications, New York, polled 2,500 US online users about their views of e-commerce; they were almost evenly divided between those who buy (29%), those who browse but do not buy (33%), and those who do not even visit merchandising sites.

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The conclusions of interviews with the browsers are interesting:

- 77% said better prices would most likely encourage them to make a purchase;
- 65%, while attracted by lower prices, were concerned about security;
- Other factors that would "significantly increase their house-hold's online purchases" were: making it easier to find items (35%), comparative information (30%), faster delivery (14%), and better presentation (12%).

Purchasers were satisfied with the service; 75% of them said that they were "significantly likely" to buy again.

This conclusion was accepted by only 11% of the browser group and 1% of the non-shoppers. An interesting side bar is that customers using Internet Service Providers appear to be more likely to make purchases than those of America Online (AOL). In the Jupiter study, 35% of all users had made at least one purchase; the penetration was lower, at 27%, among those accessing the Internet through AOL.

Ability to Change

Venture capitalists have identified the following attributes as those necessary for success in the Internet business.

- Speed-to-market
- Customer orientation
- Integrity
- Innovation
- Ability to deal with failure

Great innovation tends to go hand-in-hand with a strong possibility of failure. One accepted way of dealing with this is to experiment with alternatives. The ability to do so is one of the Internet's major features. When something is put up on a Website, the length of time people view it is an immediate indication whether they like it or not. If they don't, you are able to make fairly quick adjustments.

The traditional way of doing business is to say, "how are we going to get them to like our product?" If a firm, such as Intel, takes three years to design a product and spends US $2 billion to build a factory, change will prove extremely difficult. Usually, it is up to the marketing department to figure out a way to solve the problem and convince customers that they really do want the product that's for sale. On the Internet, it is a lot cheaper to change products than to convince customers to buy something they don't like.

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Business Trends

Gary Hamel and Jeff Sampler of the London Business School believe that the reality of e-commerce is "consumer control"; to them, "the Internet represents the ultimate triumph of consumerism". They expect "the Web will fundamentally change customers' expectations about convenience, speed, comparability, price and service. Those new expectations will reverberate through the economy affecting every business..."

They go on to state that one fundamental difference between conventional marketing, such as television, and the Internet is that the Web is not about "push", but about "suck".

Mass marketers spend substantial amounts to push their message to a viewer "whether he likes it or not". The Internet allows consumers to extract from Cyberspace whatever interests them and leave behind what doesn't. While a viewer is willing to let an advertiser take over a TV screen for up to two minutes, he is unlikely to let someone ambush his computer with an ad for even 30 seconds, except for a banner sharing the screen with useful information. As advertisers accelerate their hype, consumers have developed even more sensitive "BS detectors". More and more people are looking for unbiased information and "supplier neutral" sources.

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APPENDIX – B - INTERNET MEGA-TRENDS

"Innumerable confusions and profound feelings of despair invariably emerge in periods of great technological and cultural transitions. Our 'Age of Anxiety' is, in great part, the result of trying to do today's job with yesterday's tools - with yesterday's concepts ..... Youth instinctively understands the present environment - the electric drama". Marshall McLuhan

Usage

1. Internet usage mimics real life "epidemics" - more than 200 million went on-line from 1994 to 1999 with about 100 million more this year.
2. While global growth is still in the early stages, not all markets are the same.
3. The Internet will continue to expand as a distribution and communications medium, becoming part of everyday life.
4. Wireless Internet access will become pervasive.
5. Broadband access is becoming increasingly available.

Business

6. Internet will mean altering the practices and processes of most businesses. All firms must become Internet based enterprises or cease to exist.
7. Internet-related efficiencies can generate cost savings and opportunities for companies (B2B) and improve the position of consumers (B2C).
8. Many traditional companies will lose revenue to Internet based enterprises. In the United States, e-Commerce revenues should exceed 100% of annual GDP gains within 10 years.
9. Because the Internet creates a true "global village", small companies can leverage its reach to "get big, fast". However, the cost of ramping up most Internet firms is high, and will only increase.
10. Watch what the "kids" want; children are an authority.
11. Due to increasing returns and network effects, the revenues and profits of the Internet leaders will show substantial growth.

Investment

12. The many venture-capital-stage investments in the stock markets create unusually high risks for investors.
13. From Morgan Stanley: "When all is said and done, 30% of Internet IPOs will be trading above issue price, 70% below."
14. From The Motley Fools: "90% of Internet stocks are overvalued and 10% are dramatically undervalued."
15. The value of an enterprise is based on the present value of future cash flows .... always has been .... always will be.

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APPENDIX – C - INTERNET STATISTICS

Statistics with respect to Internet users tend to be imprecise as no census has ever been taken, nor perhaps could one be taken. This section is based on a number of sources and summarizes the research our firm does on a continuous basis to keep abreast of the rapid developments in the high-tech field.

Internet Users

Table I sets out estimates of the number of Internet users, sixteen or over, for 1995 to 1999, by major markets, together with projections for 2000 to 2004 from International Data Group ("IDG"); others have up to 375 million in 2000. The US proportion of the worldwide total declines from about 70% in 1995 to around 26% in 2004. Even though 64% of Americans, twelve or older, are reported to have used the Internet in 1999, future growth for US users is likely to slow down because of three factors:

- The gap between digital haves and have-nots.
- The belief by a third of adults that they do not need it.
- The growing number of adults (27.7 million) who have quit.

Table I

Adult Internet Users in Millions

			Estimates			CAGR
	1995	**1996**	**1997**	**1998**	**1999**	**%**
United States	9.7	23.2	38.9	62.8	88.6	75
Europe	2.2	8.3	22.7	40.9	71.8	141
Rest-of-World	2.0	6.7	25.2	38.5	51.1	139
Total	13.9	38.2	86.8	142.2	211.5	100
US Share	70%	61%	45%	44%	42%	

			Estimates			CAGR
	2000	**2001**	**2002**	**2003**	**2004**	**%**
United States	103.1	116.0	130.0	143.0	154.0	75
Europe	95.6	119.0	145.0	180.0	214.0	141
Rest-of-World	75.3	92.0	125.0	177.0	232.0	139
Total	274.0	327.0	400.0	500.0	600.0	
US Share	38%	35%	33%	29%	26%	

Table I shows the rapidly increasing importance in the Internet of Europe and the rest of the world ("ROW") in comparison to the United States. While in 1999, the US only represented 40% of Internet users, as shown below, English is by far the dominant language.

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Languages of the Internet

Table II-A analyzes Internet access in 1999 (defined as e-mail addresses) by primary language; the numbers are larger than the users in Table I, as everybody is included and some people have more than one e-mail address. This classification was adopted as those speaking the same language tend to communicate more frequently with each other irrespective of where they live. It also includes estimates of the populations and contribution to global GDP of the related countries.

Table II-A

Language	**Internet Access**		**Population**		**GDP**	
	million		**million**		**US $billion**	
English	148.5	57.6%	322	5.4%	10,780	32%
Other European	72.2	28.0%	1,089	18.3%	10,550	31%
Asian	36.9	14.3%	1,334	22.4%	9,575	29%
Other	0.4	0.1%	3,207	53.9%	2,805	8%
	258.0	100.0%	5,952	100.0%	33,710	100%

The developed countries in North America, Western Europe and Japan dominate the Internet. In light of the growth rates shown in Table I, this situation is not likely to change by 2004, although the use of English will probably have diminished to less than 50% by then, but, as it is the principal means of international communication, it will continue to be the language of e-commerce for the foreseeable future; this is likely strengthened by the fact that India, treated as Asian, is creating a large number of English-speaking engineers, who may well double the "English" population within five years.

Of the 258 million worldwide users from Table II-A, 93.8% use eleven major languages, as demonstrated in Table II-B. This suggests that major Websites should have multilingual capabilities, but very few do so. Jupiter research reports that fewer than one-third of the major online companies have localized sites in Japanese, German, French or Spanish, much less other languages.

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Table II-B

Language	Internet Access million	
English	148.5	57.6%
Japanese	19.8	7.7%
German	14.0	5.4%
Spanish	12.0	4.7%
Chinese	10.2	4.0%
French	9.9	3.8%
Italian	9.7	3.8%
Dutch	5.5	2.1%
Korean	4.4	1.7%
Portuguese	4.1	1.6%
Swedish	3.9	1.5%
Subtotal	242.0	93.8%
Other	16.0	6.2%
Total	258.0	100.0%

e-Commerce

Table III-A looks at e-commerce in ten major developed countries which represent 75% of world Internet access but only 12% of the population. It compares estimated online consumer sales in 1998 (the latest available figures), and projections for 2002, with Internet access in 1999, irrespective of age; it also includes Internet penetration among the total population.

Tables I to III show the enormous changes expected in the Internet during the next five years. The most noticeable will be a slowing in the annual growth rate of users, which has already become apparent in the United States.

A study by the Angus Reid Group shows that 56% of Canadians used the Internet between November 1999 and January 2000, compared with 59% of Americans. Other countries with wide adult Internet usage were: Sweden (53%); Australia (48%); Switzerland (45%); Finland (44%); Netherlands (40%); Hong Kong (36); Japan, Singapore and Britain (each 32%); South Korea (31%); Germany and Taiwan (each 30%)

The study indicates that 40% of respondents, representing about 340 million people worldwide, had no plans to use the Web in the next year due to lack of interest, knowledge or relevance to their lives.

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Table III-A

Online Sales	1999 US$billion	1998 US$billion	Access million	Population million	Portion Connected
US	37.4	409.0	110.8	273.0	40.6%
Japan	2.0	28.8	18.2	126.0	14.4%
Germany	1.7	62.8	12.3	82.0	15.0%
Britain	1.4	47.6	13.9	59.0	23.6%
Canada	1.4	19.9	13.3	31.0	42.9%
Australia	1.4	8.0	6.8	19.0	35.8%
France	0.4	28.5	5.7	59.0	9.7%
Italy	0.4	18.1	4.7	57.0	8.2%
Netherlands	0.4	12.6	2.9	16.0	18.1%
Sweden	0.3	8.7	3.9	9.0	43.3%
Group	46.8	644.0	192.5	731.0	26.3%

These figures are rather higher than those from other sources, which show Japan's online penetration increasing from about 4% at the end of 1997 to around 14% at December 31, 1999. CVS believes that the Japanese gain was due to a concentrated push from both industry and government. Growth in PC access is expected to be augmented after 2000 by wireless Internet access as the country's leading cellular players adopt third generation mobile telephony standards and the WAP protocol.

Canada, in 1998, generated 3.0% of the Group's online sales, ranking fourth. By 2002, while remaining at 3.0%, it is projected to fall to sixth. During the period, the US share is expected to decline by 16.5 percentage points, from 80% to 63.5%, as the European Union increases its share by 17.9 percentage points from 9.8% to 27.7%.

G-7 Growth

Canada and the United States, with their customary free local calls, have shown rapid growth in Internet penetration, especially among businesses; in Europe and Japan, however, the practice of pricing local telephone calls on a per-minute basis has inhibited growth. During 1998, a British company introduced "free" Internet service, paid for by a share of the local call revenue; in 1999, competition started in Britain and the concept was extended to Germany and other countries.

As a result, Internet access during 2000 in the four largest European markets and Japan is expected to increase as follows:

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Table III-B

	Internet Access		
	1999 million	**2000 million**	**Growth**
Japan	18.2	26.9	47.8%
Germany	12.3	21.0	70.7%
Britain	13.9	17.9	28.8%
France	5.7	9.0	57.9%
Italy	4.7	11.6	146.8%

The Multinationals' Situation

The majority of global corporations now are investing far more in e-commerce than they did in 1999, but, according to The Conference Board, they are not sufficiently servicing customer transactions online. More than two-thirds of the participants in a study say they have "in place a systematic, strategic approach to Internet-based initiatives with top level executives". However, more than half have no way of assessing their e-commerce programs, and less than one-sixth regard themselves to be on the cutting edge. While all participants are aware of the importance of e-commerce, 25% concede they haven't moved beyond basic online "brochureware", and 79% said that e-commerce accounts for less than 5% of revenues.

Meta Group, a US consulting firm, believes that "Corporate America is not tapping the true potential of the e-business revolution". It goes on, "A fully realized e-business strategy can lay the foundation for new business models, but few corporations have demonstrated the vision and devoted the resources to make this happen". Most respondents report relatively low e-business investment; only 10% spend more than US $5 million a year, and 65% under US $1 million.

In Europe, 90% of businesses now have a Website, a 17 percentage point increase from 1997, but only 35% currently practice e-commerce and only 30% regard their Website as a useful marketing tool. In Britain, 55% are engaged in e-commerce, followed by Germany (41%); Italy (23%) and France (21%) are at the rear.

e-Commerce spending in 2000 is expected to be rather different from that of 1999, as shown in Table IV, which indicates the percentage of the participants in the Meta Group study that will "invest" in any particular category.

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Table IV

	Investment	
	1999	**2000**
Customer Related		
Marketing	77%	41%
Customer Service	69%	54%
Direct Sales	65%	44%
Business Process Related		
Finance/Accounting	42%	43%
Distribution	39%	43%
Inventory Management	32%	34%
Supplier Relations	28%	34%

According to McKinsey & Company, as reported in Business 2.0 January 2000, the growing multicultural nature of the Internet is creating a dilemma for US e-businesses: "Should companies focus on solidifying their domestic operations or divert limited managerial resources to foreign markets where local players stake a first-mover advantage?"

This conundrum is intensified by the expected decrease in the US share of online sales. In 1998, it represented 80% of those in the ten developed countries listed in Table III. By 2002, the US share is projected to be only 64%. If one adds China, for which no satisfactory figures are currently available, the US is likely to represent less than 50% of worldwide e-commerce by 2004.

Websites

The number of Internet users increased by about sixteen times in the four years from 1996 to 1999, rising from 13.9 million to 221.5 million. During the same period, the number of Websites rose 133 times, from 75,000 to 9,950,000; by May 1, 2000, they had gained another 44%, to 14,323,000.

Table V, using data from NetCraft, a British consulting firm, shows the number of Websites identified since the first monthly survey was taken on August 1, 1995. Growth seems to be accelerating; in January 2000, nearly one million new sites were founded.

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Table V

	Websites	Gain
August-01-95	18,957	start
January-01-96	74,709	294%
July-01-96	299,403	301%
January-01-97	646,162	116%
July-01-97	1,203,096	86%
July-01-98	1,834,710	52%
July-01-98	2,594,622	41%
January-01-99	4,062,280	57%
July-01-99	6,598,697	62%
January-01-00	9,950,491	51%
May-01-00	14,322,950	44%

While the number of sites is rising rapidly, few attract a large number of unique visitors, recording only once multiple trips to the same site. To track them, PC Data Online uses a proprietary tool. Four of the top five sites world-wide in April 2000 were portals; the major change from December 1999 is that Lycos has dropped to seventh, and Microsoft, which was not in the first ten at the end of the year, has become number five.

Table VI-A

Unique Visitors

	Apr-00	Reach	Dec-99	Gain
Top 5 US Websites	**'000**		**'000**	
Yahoo.com	49,455	64.9%	36,820	34.3%
AOL.com	43,299	56.8%	36,691	18.0%
msn.com (sub. of Microsoft)	36,917	48.4%	26,746	38.0%
geocities.com (sub. of Yahoo)	33,644	44.2%	28,492	18.1%
Microsoft.com	27,796	36.5%	18,160	53.1%
	227,728		183,404	24.2%

Three other sites had more than twenty million visitors: AOL proprietary (26,576,000), Passport.com (26,319,000), and Lycos (22,335,000). The Reach figure in the table shows the portion of the 75,247,000 unique visitors for each site.

Europe was responsible for 9,231,000 visitors (12% of the total), the same share as in December 1999. Generally, visitors remain within their own country, other than the Spanish and Italian Yahoo! portals, which showed visitors from France and Germany.

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Table VI-B

Monthly Viewings	Number of Sites	Unique Visitors	
		Total	Average
Over 20 million	8	236.1	29.5
15m - 20m	9	159.6	17.7
10m - 15m	14	165.4	11.8
7m - 10m	17	135.9	8.6
6m - 7m	2	13.8	6.9

Table VI-C shows the top five sites for Britain, Germany and France in March 2000. Of these, only four are local: freeserve, a UK ISP; T-online, the ISP subsidiary of Deutsche Telekom; Wanadoo, the ISP subsidiary of France telecom; and Multimania, another French ISP. Yahoo! has a better than 40% Reach in each country, and Microsoft, both alone and through MSN, is in a strong position.

Table VI-C

Top 5 Websites

Britain		Germany		France	
Site	Reach %	Site	Reach %	Site	Reach %
Yahoo	42.1	T-Online	69.5	Wanadoo	48.4
mgm	42.1	Yahoo	40.2	Yahoo	46.2
Freeserve	32.1	Lycos	34.9	Multimania	31.9
Microsoft	29.8	AOL	33.9	msn	31.8
AOL	26.1	Microsof	28	Microsoft	31.7
Lycos	23.6	msn	27.3	AOL	31.6

Uses of the Internet

Nearly everybody (86%) who is connected to the Web employs e-mail; the other top ten uses in the United States in January 2000 were:

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Table VII

	%
Research	83
Operating Website	71
Transferring Files	62
Shopping	47
Marketing	42
Dealing with Suppliers	41
Customer Service	38
Selling	36
Entertainment	30

US e-Commerce

While in Table VII "Dealing with Suppliers" (businesses) at 41% is not as common as "Shopping" (consumers) at 47%, the amounts spent on books, CDs, personal computers, etc. are much lower than for commercial purchases on the Internet. This is confirmed by the following figures from Dataquest, a San Jose consulting firm:

Table VIII-A

US$ billion	**Estimated**	**Projected**	
US Business to:	**1998**	**2003**	**CAGR**
Consumers (B2C)	8	108	65%
Business (B2B)	30	492	75%
	38	600	

These projected figures for total e-commerce in 2003 are 47% higher than the projected 2002 US online sales shown in Table III. In our view, the tables are consistent, as Table III shows a four year CAGR of 82%.

Consumer

In January 2000, A C Nielsen's Homescan Net*Views Survey indicated that they had purchased the following items online:

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Table VIII-B

Books	42%
CDs/DVDs/Videos	38
Software	29
Travel	28
Clothing/Apparel	27
Specialty Gifts	24
Computer	18
Entertainment	17
Houseware	16
Grocery or Drug Products	13

This pattern is supported by Table IX-C, which shows the top five shopping sites among US home users in April 2000. Bricks and mortar retailers can take heart from the inclusion of sears.com as number 5, with the highest buying rate. They will also be pleased by the most often-cited reason for not buying online: a preference for the tactile experience of shopping in a store.

Table VIII-C

Top 5 B2C Sites	**Unique Visitors '000**	**Overall Reach**	**Projected Buyers '000**	**Conversion Rate**
amazon.com	16,260	21.2%	1,506	9.3%
ticketmaster.com	5,674	7.4%	633	11.2%
barnsandnobel.com	5,663	7.4%	439	7.8%
cdnow.com	6,797	8.9%	367	5.4%
sears.com	2,627	3.4%	303	11.5%

The future of many online retailers is considered to be in doubt by Forrester Research in an April 2000 Report, "The Demise of Dot Com Retailers". The Research Firm felt that B2C companies were in trouble, due to their concentration on growth and deferral of profitability, as venture capital and public investors would not be willing to continue financing their activities.

The problem is exacerbated by the increasing number of giant bricks-and-mortar retailers, who are aggressively pushing online. "The ability to synchronize online and offline sales is pretty powerful", when combined with brand name power and product-return convenience. "The Internet businesses that will stick around are those that promote novel methods of retailing."

Advertising

While most Internet users find the banner ads on many sites annoying, they appear to work in stimulating the usage of prescription drugs. For patients requesting a specific medication from

their doctor, according to Cyber Dialogue, pharmaceutical companies spent only US $14 per Internet-generated request, compared with US $197 for patients reached by TV, and US $220 for those who learned about a drug through print.

Business

In 1999, B2B sales in the US were US $114 billion, according to Goldman Sachs, of which electric power transactions accounted for US $27 billion (24%). Deloitte Consulting estimates that, by the end of 2001, 91% of US businesses will do some of their purchasing on the Net, compared with 31% currently. By 2003, Deloitte expects B2B sales to be six times as large as those in the B2C market; this is rather more than the five times shown in Table IX-A.

Behind this growth is the expectation of a "big payoff". Boston Consulting Group figures that in manufacturing alone, B2B e-commerce will boost productivity by 9% within the next five years. This is consistent with the figures in a December 1999 Goldman Sachs study; this estimates that the use of the Internet would produce savings in procurement costs, compared with current methods shown in Table IX-D.

Table IX

Industry	**%**
Aerospace Machining	11
Automobiles	14
Chemicals	10
Coal	2
Communications	5-15
Computing	11-20
Electronic Components	29-39
Food Ingredients	3-5
Forest Products	15-25
Freight Transport	15-20
Health Care	5
Life Sciences	12-19
Machining (Metals)	22
Media & Advertising	10-15
MRO (Maintenance, Repair & Operating	10
Oil & Gas	5-15
Paper	10
Steel	11

Forrester Research believes that entrenched relationships with suppliers and the lack of clear financial returns keep most purchasing managers offline. By 2002, they expect that more than half

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will use purchasing systems integrated with online suppliers and B2B exchanges. The cost of integration is expected to prevent most firms from creating online relationships with more than a limited number of preferred suppliers.

International e-Commerce

Beginning in 1998, the United States entered a period of e-commerce hyper growth, which is reflected in the tables above. The Internet is a worldwide phenomenon and, according to Forrester, Canada is about two years behind the US and only months ahead of Britain and Germany: all three countries are likely to reach the hyper growth stage in 2000, with Japan, France and Italy following by 2002.

On a world-wide basis, eMarketer, a New York research firm, pro-jects e-commerce revenues will rise from $98 billion in 1999 to $1.2 trillion in 2003, as shown in Table VIII.

Table X

	1999	**2000**	**2001**	**2002**	**2003**
$US billion	98	197	381	709	1,240
Growth	n/a	101%	93%	86%	75%

CVS believes that these tables indicate that a global perspective is imperative in the longer run, but that the primary market for e-commerce is likely to be the United States and, to some extent, Canada for up to 2004. Therefore, the remainder of Internet statistics concentrates on the United States.

US Internet Penetration

According to Scarborough Research, a California firm, five cities in the United States had reached 50% Internet penetration by February 1999. These were: Washington, DC (59%); San Francisco (56.1%); Austin, TX (55.5%); Seattle (53.5%); and Salt Lake City (50.0%). The study covered 64 major markets, with penetrations of over 30%. Conclusions were as follows:

Table XI

Penetration	**Number**	**%**
Over 50.0%	5	7.8%
45.0% to 49.9%	16	25.0%
40.0% to 44.9%	15	23.4%
35.0% to 39.9%	20	31.3%
30.0% to 34.9%	8	12.5%
	64	100.0%

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US Internet Access

At May 1, 2000, individuals could visit over fourteen million Web-sites in search of information and entertainment from work, home and elsewhere (mobile). In the United States, the adult visitors originating from the different sources have remarkably similar demo-graphics, as shown by these July 1999 statistics from Cognosco Publishing of New York.

Table XII-A

Internet Users	**Work**	**Home**	**Mobile**
Gender			
Male	58%	49%	73%
Female	42	51	27
Age			
17-24	12%	9%	10%
25-34	15	16	26
35-44	30	18	29
45-54	24	23	27
55-64	11	22	7
65+	8	12	1
Frequency			
Daily	80%	57%	36%
Weekly	12	30	22
Less	8	13	42
Devices			
Desktop PC	93%	87%	58%
Laptop	2	6	15
Other	5	7	27

In the United States, Internet use at work is much more intensive than at home, as shown by the figures for April 2000 from Nielsen/NetRatings in Table XII-B; times are shown in hours and minutes.

Table XII-B

	Work	**Hours**
Sessions	38	19
Unique Sites Visited	27	11
Page Visits	1,322	671
Time Spent	20:06	9:26
Active Surfers	30.9 mil	80.3 mil

In April 2000, surfers had very similar visiting patterns, whether at work or at home.

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Table XII-C

	Work Site	Time	Home Site	Time
1.	Yahoo	1:40	AOL	0:29
2.	AOL	0:45	Yahoo	1:04
3.	msn	1:23	msn	0:54
4.	Microsoft	0:15	Excite	0:27
5.	Lycos	0:17	Lycos	0:15
6.	Excite	0:34	Microsoft	0:09
7.	Go Network	0:37	Go Network	0:26

The US Consumer Internet Market

There are approximately 102 million households in the United States, increasing at a rate of between l% and 2% per year; at the end of 1999, close to 50% of them owned PCs. This proportion is projected by IDC to rise to 60% by 2002.

In 1997, IDC conducted a survey regarding the interest of US households in the Internet; from this, they divided households into eleven groups, forming three categories:

Table XIII

Lost Causes	37.5%
Poor Folks	
Leave-us-Alone	
Couch Potatoes	
Entertain-us	
On-the-Cusp	34.0
Blasé	
Old Folks	
Working too hard	
Have-it-at-the-Office	
New Media Aficionados	(28.5%)
Single Boomers	8.7
Country-Clubbers	9.7
Progressive Parents	10.1
	100.0%

While most members of "Lost Causes" are unlikely ever to visit the Company's Website, CVS believes that there is good potential among two of the "On-the-Cusp" groups, "Old Folks", and "Have-it-at-the-Office". However, a large proportion of visitors, at most ".com shopping sites",

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are likely to be New Media Aficionados, and the demographics of this category, shown in Table XI, are important.

An important segment is the growing working-too-hard group of adults who have tried the Internet and discontinued its use. Cyber Dialogue, a New York City Internet research firm estimates that in September 1999, there were 27.7 million of these in the United States, an increase of 195% from the 9.4 million found in February 1997. "Only about one-third of these past users expect to go online any time soon".

Table XIV, which uses data from the GVU Internet Survey, shows the proportion of US Internet users shopping online during the last five years. The slow growth has been partly due to concerns about the security of credit card and other data. As users come to trust e-commerce models, online shoppers are expected to peak at over 75% of US users, with lower penetration in Europe and Asia.

Table XIV

	1995	**1996**	**1997**	**1998**	**1999**
Shoppers online	10%	15%	19%	39%	58%

As shown in Table XV, the three groups in New Media Aficionados differed significantly among themselves as well as from the overall population.

Table XV

NEW MEDIA HOUSEHOLDS - 1997

	Overall Population	**Single Boomers**	**Country Clubbers**	**Progressive Parents**
Number ('000)	100.0	8.7	9.7	10.1
Online (%)	20.4	32.5	27.5	25.0
Median HH income (US$)	34,000	39,000	47,000	46,000
Average Age (adults)	45.0	44.0	49.0	40.0
Married(%)	54.7	22.0	77.8	76.3
Kids (%)	38.6	4.0	43.4	80.1
TV (hours/week)	24.9	18.4	21.0	24.6

The IDC survey asked New Media households what would cause them to spend more time online; the dominant response was better means of navigation and the ability to obtain more information. The survey did not support the generally expressed view that increased use required more entertaining visual and audio Websites.

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Relationships with Other Media

As the Internet becomes more ubiquitous, its users tend to have less time for other media. Table XIV, which is based on information from Jupiter Communications and eMarketer, shows radio and television are relied on by nearly every household, but that use of other media is much less.

Table XVI

Sources of News	**%**
Radio	99
TV	98
Magazines	81
Cable	62
Newspapers	59
Internet	29

In particular, the 80% of households relying on newspapers in the 1960s has declined to 59% today. Even after this drop, which has resulted of some papers losing as much as 50% of their classified advertising to the Web, newspapers still appear to be vulnerable.

To build brand names and Website awareness, Internet businesses have to use traditional media to attract visitors. But new and old media live on a two-way street; eBay successfully introduced a magazine, while The Wall Street Journal has one of the few profitable subscription Websites at wsj.com. The ultimate combination of new and old media came in January with the acquisition of Time-Warner by AOL.

US Internet Demographics

In the past, the demographics of Internet users in the United States did not reflect those of the general population, but now tend to do so. For example, in the fall of 1999, women only comprised 46% of online users compared with 51% of the general population; however, this situation has now corrected itself.

Tables XVII-A, XVII-B and XVII-C compare three key demographic criteria for Internet Users and Internet Shoppers with the general population, based on surveys in the fall of 1999. Table XVII deals with age distribution. As might be expected, the 18 - 34 group is more dominant in Internet users and especially Internet shoppers than the general population, while the 55 and older group has been noticeably absent from the Internet.

These figures confirm the lesser interest of "Old Folks", as shown in the IDC study. However, many observers expect that use of the Internet by this age group will intensify over the next few years.

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Table XVII-A

Age	Internet Users	Internet Shoppers	General Population
17 & Younger	28%	23%	26%
18 – 34	29	36	23
35 – 54	31	33	30
55 & older	12	8	21

Table XVII looks at Household Income. Again, the conclusions con-firm expectations, as families with low incomes are less likely to have a PC and be involved in the Internet. The most surprising figure is that the portion of Internet shoppers with incomes less than $50,000 is greater than that of Internet users. CVS believes that this is due to the large number of one-person student households in that group. The expected increase in the number of seniors online bodes well for Internet shopping, as they tend to have adequate, if not better, household incomes.

Table XVII-B

Household Income	Internet Users	Internet Shoppers	General Population
US$'000			
less than 50	36%	38%	65%
50 - 75	27	24	18
75 - 100	17	15	9
100 & more	20	23	8

Table XIX deals with education and shows a surprising portion of Internet shoppers have graduate degrees in comparison with Internet users and the general population.

Table XVII-C

Household Income	Internet Users	Internet Shoppers	General Population
Education			
Dropout	4%	3%	19%
High School	17	15	33
Some College	36	30	26
Degrees	26	25	15
Post-Grad	17	27	7

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Women on the Internet

Between October 1999 and March 2000, more than nine million women went online in the United States, bringing gender parity to the Internet population. A survey by the Pew Internet & American Life Project found that this surge in Internet usage by women is "Re-shaping America's landscape because women are using e-mail to enrich their important relationships and enlarge their network."

In some places on the web, the gender gap is quite pronounced. Women are more likely to seek health knowledge, play online games, get religious information and look for new jobs. Men are more inclined to obtain news and financial data, trade stocks, participate in auctions, visit government Websites and sports reporting. The biggest difference is in shopping patterns, as shown in Table XVIII.

Table XVIII

Purchase	**Men**	**Women**
Auction Items	55%	48%
Books	59	64
CDs	60	60
Clothing		
Men	29	20
Women	21	39
Children	18	31
Computers	76	57
Electronics	44	26
Flowers	na	21
Health & Beauty	19	42
Investments	14	6
Magazines	31	27
Sporting Goods	19	10
Travel	34	24
Toys	29	41
Videos	38	28

Security

The recent "love bug" scare drew attention to the problems of computer viruses that can spread around the world virtually instantaneously. Intruders have lots of "ways-to-get-you", as shown in Table XIX-A; data for this and Tables XIX-B and XIX-C comes from the Computer Security Institute.

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Table XIX-A

Frequent Computer Transgressions
(multiple answers permitted)

Viruses	85%
Employee abuse of Internet	79%
Unauthorized access by insiders	71%
Denial of service attacks	27%
System penetration by outsiders	25%
Theft of proprietary information	20%
Data sabotage	17%
Financial Fraud	11%

Such activity is on the rise, as shown in Table XIX-B, which lists the percentage of the Institute's members reporting unauthorized use of their computer systems.

Table XIX-B

1995	42%
1996	50%
1997	64%
1998	62%
1999	70%

Finally, Table XIX-C sets out the suspected perpetrators, according to the victims.

Table XIX-C

(multiple answers permitted)

Disgruntled Employees	81%
Independent Hackers	77%
US Corporations	44%
Foreign Corporations	26%
Foreign Governments	21%

Some of those Appendices are really not pertinent to the main topic of this presentation, but I thought the facts would illustrate how you should always look for the new and unexpected and take absolutely nothing for granted - not even what your customers tell you. I remember valuing a division of a well-respected, national company, whose head proudly told us that there were no other programs in existence in competition with theirs.

That sort of statement always makes us slightly suspicious, because it might just be that nobody has any earthly use for the stuff. However, after half a day's work, our researcher stopped

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telephoning; she gave up after locating 43 systems that offered an almost identical service - not in Canada, but everywhere from Australia to Belgium. Of course, that meant that in view of the fairly small Canadian market, any sales overseas, usually looked upon as essential gravy, would not materialize, obliterating any chance of recovering development costs.

To get back to the statistics offered, not only will they give you an overview over recent happenings, they may also come in useful when you are trying to present the right image to your fellows. Just remember, in our millennium, image is no longer something abstract, like the Emperor's new clothes - it has become something very concrete.

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