FH Technikum Wien

English B-3

Economics, Technology and Society

Department of Humanities

FACHHOCHSCHULE
TECHNIKUM WIEN

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1 Developing skills for your future

As engineers with a bachelor degree in a new, technology-centered interdisciplinary field, you will have an impact on how technology evolves and business is done in our time!

We will be depending upon you to:

- Develop safe, sustainable, user-friendly and cost-effective products, processes and systems;
- Persuade other decision-makers (bosses, finance managers) to implement your ethically sound projects;
- Communicate effectively with local and international partners;
- Have a positive impact on the way people are treated in your business.

In your professional lives, you will be able to surmount most technical and business-related challenges through your know-how, problem-solving skills and abilities, creativity, and other resources.

The main problems you confront are likely to be caused and/or affected by communication issues: with colleagues, bosses, managers, team members, employees, clients, and international partners.

Help is on its way!

Every Technikum English course provides a variety of situations to give you practice in making the following three decisions:

- *Who* I should talk to?
- *What* do I need to say?
- *How* should I say it?

In our courses, you will be using and strengthening two sets of related – but not identical – skills:

- Communication skills
- Language skills

2 Assignments

2.1 Economic concepts

Focusing the spotlight on the economic context in which we live and work, we will become familiar with, discuss, and take a quiz on key principles that operate upon us, and that describe our participation in the economy in our various social roles as:

- Private citizens – Participants in professional and other facets of public life
- Recipients of public-sector services
- Consumers of private-sector goods and services
- Wage earners – Taxpayers – Voters

2.2 Economic theories

Political systems are inseparable from economic systems. All governments are based on and negotiate (or refuse to negotiate) which – and to what extent – services are financed, provided, and managed either by the public sector (the government) or the private sector (businesses, individual citizens), or both. We will become acquainted with, discuss, and take a quiz on the main economic theories that gave form to all political systems operating in the world today.

2.3 Planet Utopia

Can we do it better? Do we need to take a closer look at long-term potential consequences of current business and lifestyle practices? In small teams, you will be creating and presenting your own utopias, or dystopias.

2.4 The Corporation

You will be watching, discussing, and writing about the film documentary *The Corporation*. Corporations are currently the most powerful entities in the world. We will explore:

- How corporations got their power
- Consequences of the use and misuse of that power
- How groups of people use non-violent forms of action to assert and regain their rights against the collusion of big business and government.

2.5 Internationalism vs nationalism and globalisation

Is there an approach to government policies on imports, exports, and small start-up businesses, that would help preserve local cultures, products, goods, and services, while also opening societies to "tastes" of other cultures? We will examine

and compare the three main ideologies and approaches operating in the world today:

- Nationalism
- Globalisation
- Internationalism

2.6 Business English

We will become acquainted with and practice using the language and terms of the current business world.

2.7 Innovation

From the principle of "creative destruction" to real-life "smashing successes and crashing failures", we will explore the concept of innovation from many angles, with these central questions in mind:

- Does having a good idea ensure success on the market?
- What is needed to turn a good idea into reality?
- What different forces and influence play a role in whether or not an innovation is a success or a failure?

2.8 Business ethics

We will examine real-life case studies in business ethics.

2.9 Advertising and marketing

Advertisements alert us to the availability of public-sector and private-sector goods and services. Advertisements also "wallpaper" our world, shut out other vistas, and influence our desires through their relentless presence and repetition, and representations of ideal people living ideal lives. Advertisements help create and reinforce social "norms" –normative people and normative living – that we consciously and unconsciously absorb.

We will analyse advertisements:

- To become aware of the "normative" messages they are pushing, and
- To diminish our susceptibility to them and to the desire for the products they feature.

We will practice making use of the power of texts combined with visuals:

- For products, services and causes we believe in;
- For persuasion rather than manipulation.

2.10 Negotiations

In a group negotiation game, you will practice:

- Developing and communicating strong persuasive arguments;
- Responding spontaneously to the arguments of others, and to their critiques of your own argumentation;
- Standing your ground;
- Reaching reasonable "win-win" compromises.

2.11 Job application process

You will be:

- Identifying the job-relevant skills you have developed doing your favorite free-time activities;
- Writing an English-language CV that clearly displays what makes you different to other candidates with a similar education;
- Writing an English-language job/internship application covering letter that clearly demonstrates how your skills and experience match the specific requirements of the position you are applying for;
- Practicing the art of handling a job interview.

2.12 Innovation and you: the start-up enterprise project

Making use of the knowledge we have acquired and the skills we have strengthened throughout the year, in small teams you will be:

- Creating your own realistic or Utopian product that addresses a real-life need, and makes use of technologies and/or concepts in your field of study;
- Founding a start-up company to produce and promote this product;
- Writing an email invitation to your company's debut presentation;
- Presenting your company and product for funding by convincing the audience that you have:
  An innovative, technically viable product, process, system or service;
  A market for this innovation;
  The most cost-effective, ethically sound strategy for every step of the production chain;
  An effective strategy for launching your innovation;
  A reasonable and viable request for funding;
  A convincing plan for turning a profit and generating an attractive return on the lender's investment in due time.
- Writing a Business Plan for your new start-up company.

3 Instructor's policies

3.1 Attendance

Since class participation and in-class work are important parts of the English program, it is imperative that each student attend classes regularly.

Each student will be allowed a total absence of four 45-minute class periods. Beyond that number, each absence will result in a penalty of 0.25 grade points for each 45-minute class period in the final evaluation of the student's performance. Thus, if a student has done sehr gut work but has accumulated four unexcused absences his/her course mark will be reduced to gut.

Students should report all absences in advance. Clearly state the class date and the reason for a planned absence (business trip, field trip etc.). In case of illness or other unforeseeable event, an e-mail indicating that fact should be submitted as soon as possible.

3.2 Participation

Students are expected to participate actively and creatively in any task. Students are also expected to approach all discussion material with maturity, intellect, and respect for other people's preferences, culture etc.

Electronic devices such as computers and smartphones are to be turned off before the class starts, because they tend to divert attention away from class activities. English courses at UAS Technikum Wien are designed to train your communication and language skills in a variety of ways, and therefore, the course design requires your undivided attention at all times.

3.3 Assignments

All assignments such as papers, oral presentations and other tasks are due on the dates announced in class. It is extremely unfair to those students who complete their assignments on time to give other students extensions on assignments. Consequently, the only times students will be given extensions will be in cases of extreme illness, or death of friends or family. Unexcused late tasks will be penalised one grade point for each class day late.

Also make sure that all the sources used in your work – both written and oral – are properly acknowledged.

In academic writing, it is mandatory to use quotation marks when you borrow the exact wording from another source. Furthermore, another person's ideas must also be acknowledged, even if you summarise those ideas in your own words.

Copying from other sources – except for short quotes properly cited – will not be tolerated. Submitting an assignment that uses another person's work, in part or in its entirety, is a reason for a failing grade (5) for the entire semester.

4 Grading policy

The grade will be determined according to three sections:

- **Assignments**
- **Language Skills**
- **Study Skills**

Assignments

Assignments include both speaking (speeches, presentations) and writing (texts, quizzes). The grade for each takes into account whether the assignment was done on time, and whether it fulfilled the task purpose. See the guidelines for required assignments in the handout.

Language Skills

By the end of the semester, the student can:

- speak fluently for level;
- speak so that grammatical errors do not cause strain on part of listener; get his idea across easily;
- write fairly clearly; grammatical errors are "higher" level; achieve purpose of assignment.

Study Skills

During the semester, the student has:

- participated regularly and relevantly; did not just wait to be called on;
- attended class regularly (no more than 2 absences); sent an email when absent and made up any work missed;
- been focused and motivated in class and on assignments.

How does the economy work?

Generations of economists have been hard at work to analyse human behaviour in order to devise models that make economic planning more reliable. Those models are mainly based on mathematical tools, and fail to include other factors that guide economic decisions of the individual. First, read this story and fill in the words on the right. Then discuss the questions below.

1 Will the winter be cold?

Read this story and fill in these words:

absolutely	–	–	**chief**	–	**collect**	–	**indeed**	
like crazy	–	**members**	–	**secretly**	–	**very**		

One autumn, the Indians ask their chief if the winter will be cold. The chief says that it will. He tells the members of the village to start collecting wood.

But he isn't really sure. So he secretly calls the National Weather Service and asks, "Is this winter going to be cold?" The man on the phone says, "This winter will be cold, indeed." So the chief tells his people to collect even more wood.

A week later, he calls the weather service again. "Is it going to be a very cold winter?" he asks. "Yes, it's going to be very cold," says the weatherman. So the chief tells his people to collect every little piece of wood that they can find.

Two weeks later, he calls the weather service again and asks: "Are you absolutely sure that this winter is going to be really, really cold?" – "Absolutely," says the weatherman. "The Indians have been collecting wood like crazy."

- **What is the point of the story?**
- **Does this story relate to economics?**
- **Can you find examples of similar mechanisms in the business world?**

Mind the different stress patterns:
e-CO-no-my
e-CO-no-mist
e-co-NO-mi-c(al)
e-co-NO-mi-cs

2 "Economics is what economists do."

Attributed to Canadian-born economist Jacob Viner, this definition is the only foolproof description of economics. Over time, leading economists have tried – and failed – to define the scope and limitations of economics, but it is safe to say that economics is a social science that tries to understand how individuals and nations behave in response to material constraints.

To understand what is going on in today's global markets, we first need to understand a few basic concepts which are explained in simple terms below. Please note that this is only a primer, and if you are interested in further details, refer to authoritative works of reference.

Consider this example:

As an individual, you do not always have enough money to buy everything you want. In economic terms, we say that the *resources available to fulfil your wants and needs are limited*.

As a result, you must make certain choices. You have to spend part of your money on rent, electricity and food, and you might use the rest to go to the movies and/or buy new clothes and/or gadgets such as a new mobile phone, or save it.

Economists are interested in the choices you make, and inquire into why, for instance, you might spend your money on a new mobile phone instead of replacing your old pair of jeans. And they would want to know whether you would still send text messages if one message cost €2.

We can say that economics is a study of two key questions:

- What governs the way in which human labour, machines and land are combined in production?
- How are buyers and sellers brought together in a functioning market?

These questions are essential to the explanation of the factors contributing to wealth. To study these factors, economists examine how people behave according to their self-interests. Therefore, economics "is on one side the study of wealth; and on the other, and more important side, a part of the study of man" (Alfred Marshall). Until recently, however, economists assumed that behaviour was controlled by entirely rational considerations, largely ignoring the human factor. **Remember, economics is a social science!**

3 Macroeconomics and Microeconomics

These are the two vantage points from which the economy can be observed. Macroeconomics looks at the market forces that keep the economy functioning, including the total output of a nation and the way the nation allocates its limited resources of land, labour and capital in an attempt to maximise production levels and promote trade and growth for future generations.

Microeconomics examines similar issues on the level of various social groups, such as consumers, business firms, traders, and farmers. Analysing certain aspects of human behaviour, microeconomics helps explain variations in supply and demand.

There are very close links between macroeconomics and microeconomics. As economists find the reasons for certain phenomena, they can help nations and individuals make more informed decisions when allocating resources.

3.1 Scarcity

Consider this example:

> You have €50,000 at your disposal, and you want a really great car and a dream holiday. If you choose to spend all your money on a brandnew car, you must give up your plans of spending your dream holiday in the South Pacific. Or you decide to buy a nice second-hand car for €30,000, and spend the remaining money on a two-month trip to a few South Pacific islands.

In economic terms, scarcity is the tension between limited resources and unlimited wants and needs. For an individual, resources are time, money and skill. For a country, resources include natural resources, capital, labour force and technology. Compared to all our wants and needs, all resources are limited. Therefore, individuals and nations have to make decisions as to what goods and services they can buy and which ones they must forgo.

Of course, each individual and each nation will have different values, but people and nations each form some of these values as a result of the particular scarcities with which they are faced. So, because of scarcity, people and economies must make decisions over how to allocate their resources. Economics aims to study why we make these decisions and how we allocate our resources most efficiently.

3.2 Demand and supply – the backbone of a market

Demand represents how much the buyers want, i.e. the quantity people are willing to buy at a certain price. Supply stands for how much the market can offer, i.e. the quantity producers are willing to supply in return for a certain price. Market economy theories claim that demand and supply are the driving forces behind the most efficient allocation of resources.

The Law of Demand

"If all other factors remain equal, the higher the price of a good, the less people will demand that good." In other words, the higher the price of a good, the less people will buy it, and the lower the price, the more the good will be in demand.

If all the features are identical, most people will avoid buying a more expensive product because it will force them to forgo the consumption of something else they also want.

Consider this problem:

You have the choice between two laptops with identical specifications. Model A is from a renowned manufacturer you trust, but it is €400 more than the other model, which comes from an unknown manufacturer.

Which one would you buy? Why?

The Law of Supply

Like the law of demand, the law of supply deals with the quantities that will be sold at a certain price. But unlike the law of demand, the supply goes the other way. This means that the higher the price, the more producers will supply at a higher price. However, for producers, it is important to determine whether a change induced by demand is temporary or permanent.

Study this example:

The summer is very hot, and therefore, the demand for air conditioners is unexpectedly high. Manufacturers may meet the increase in demand by temporarily ramping up production.

If, however, demand is driven by a long-term climate change, many people will equip their homes with air conditioners. The change in demand will raise prices in the long term, and suppliers may expand their production facilities in order to meet the long-term levels of demand.

3.3 Utility

In addition to the laws of scarcity and the laws of demand and supply, there is the rather abstract concept of utility, which tries to explain how both individuals and economies aim to gain optimal satisfaction in dealing with scarcity.

In simple terms, utility is the "kick" you get out of a certain good or service. Generally, the amount of a person's total utility corresponds to the person's level of consumption, but, *marginal utility* usually decreases with each additional increase in the consumption of a good.

Consider this example:

All through this class, you have been very thirsty, and finally, the class is over. You decide to go for a pint of beer. After one pint, your thirst has been quenched, and your marginal utility (and total utility) after drinking one pint will be quite high.

But if you order more, the pleasure of each additional pint will be less than the pleasure you received from drinking the one before – probably because you are no longer thirsty, and you are starting to feel the effects of alcohol.

3.4 Competition, monopolies, and oligopolies

In a market economy, there are generally a number of different buyers and sellers. This means that there is competition which allows price to change in response to changes in supply and demand. Furthermore, there is choice for the consumer: there are substitutes for almost every product, so if one product is too expensive, a consumer can buy a cheaper substitute instead. In a market with many buyers and sellers, both the consumer and the supplier are equally able to influence price. In some industries, however, there are no substitutes and there is no competition. In a market that has only one or few suppliers of a good or service, the producer(s) can control price, meaning that consumers do not have choice, cannot maximise their total utility and have very little influence over the price of goods.

Perfect competition is a textbook condition, characterised by many buyers and sellers, many products and many substitutes. Perfect competition means there are few, if any, barriers to entry for new companies, and prices are determined by supply and demand. Thus, producers in a perfectly competitive market are subject to the prices determined by the market and do not have any leverage.

A **monopoly** is a market form in which there is only one seller for a product (monopolist). Entry into such a market is restricted due to high costs or other barriers, which may be economic, social or political.

See the examples on the next page.

The Austrian government holds the exclusive rights for minting coins.

A monopoly may also form when a company has a copyright or patent that prevents others from entering the market. E.g., Pfizer has a patent on Viagra.

An **oligopoly** is a market or industry dominated by a small number of sellers (oligopolists). Like in a monopoly, there are high barriers to entry. The products of oligopolists are often nearly identical, and therefore, the companies are interdependent as a result of market forces.

3.5 Price

When prices are freely established by competition, the price of a good reflects the demand for it, and price dominates the allocation of resources. This means that in a market economy, individuals and countries must decide what combination of goods and services they produce in order to achieve a maximum return. However, as resources are limited, there are two restrictions:

The production possibility frontier

The production possibility frontier (PPF) is the upper limit at which a business or a nation is most efficiently producing its goods and services, in other words, allocating its resources in the best way possible.

A well-known computer manufacturer has added music players, set-top boxes and mobile phones to its product line, and is using its resources in the most efficient way. However, if it added further products such as game consoles, it would hit the production possibility frontier. The reason is that the job market does not supply the number of talented software engineers required to design a breakthrough game console. If the company decided to use in-house talent, it would divert a lot of resources from its core businesses. This would be dangerous step for the manufacturer, because it risks falling behind in the development of new computers, music players, set-top boxes and mobile phones.

Opportunity cost

Opportunity cost is the value of what is foregone in order to get something else. This value is important to the PPF, as an individual or a country will decide how to best allocate its resources according to its opportunity cost.

You need a developer kit to complete a project for a customer, but you do not have the money to buy it because you have spent it all on a brand-name laptop. Therefore, your opportunity cost is all the money you cannot make because you do not have the developer kit.

3.6 Price elasticity

Elasticity is the degree to which demand or supply reacts to a change in price, and it depends on how essential the good is to the consumer.

Goods such as staple food are mostly insensitive to price changes because consumers need food even if its price rises. Conversely, if food in restaurants became much more expensive, many costumers would stay away because the opportunity cost of eating out would be too high. In other words, staple food is inelastic, because a price hike will only modestly affect demand. However, food in restaurants can be considered more elastic, because a change in price will lead to a change in the number of customers.

As for most economic phenomena, there is also an equation for elasticity:

Elasticity = (% change in quantity / % change in price)

If elasticity is greater than or equal to one, the curve is considered to be elastic. If it is less than one, the curve is said to be inelastic. There are three main factors that affect price elasticity:

- the availability of substitutes
- the amount of income available to spend on the good
- time.

3.7 Inflation

Strictly speaking, the term "inflation" refers to the increase in the amount of money in circulation. Today, the term generally denotes a general rise in a price index which is deemed representative of the overall level of prices in goods and services in a given economy. Various factors may cause inflation:

- increases in demand due to increased private and government spending (demand inflation);
- drops in supply due to natural disasters, increased prices of commodities, or speculation (cost-push inflation);
- the price/wage spiral – workers try to keep their wages up with prices ((built-in inflation);
- the growth rate of money supply.

Examples from history:

From 1500 to 1650, Western Europe experienced the so-called price revolution, with prices rising sixfold during that period. Possible reasons for the inflationary cycle were the large influx of gold and silver from the New World and the population growth after the end of the Black Death pandemic.

After World War I, Germany saw a period of hyperinflation that wiped out the purchasing power of the population. In mid-1919, a Goldmark containing 0.35842 grams of gold was worth 10 Reichsmarks. By the end of 1923, one Goldmark was 1,000,000,000,000 RM. The highest value banknote issued by the Reichsbank had a face value of 100 trillion RM; there were even postage stamps with a face value of fifty billion RM.

3.8 Deflation

Deflation is the opposite of inflation, i.e. an inflation rate below zero per cent which increases the real value of money so that consumers can buy more goods with the same amount of money. The reasons for deflation are:

- an increase in the supply of goods (growth deflation);
- more savings of cash resulting in a decrease in velocity of money (hoarding deflation)
- a decrease in the bank credit supply or contraction of the money supply (bank credit deflation)

A recent example:

In Japan, deflation started in the early 1990s after a large price bubble in equities and real estate had burst. The main reasons for deflation are found in fallen real estate prices, and the resulting default of companies and individuals that had invested in real estate. When real estate values dropped, those loans could not be serviced, which in turn led to a number of bank insolvencies.

The Japanese people were afraid that banks would collapse, so they were no longer willing to save their money in a bank account. That meant that no money was available for lending – and therefore economic growth. Furthermore, Japan started importing inexpensive consumable goods and raw materials from low-wage countries, forcing domestic producers to match those prices.

3.9 Comparative Advantage

A nation could aim to be self-sufficient by producing all the goods and services it needs to function. Although it may be possible, this would lead to a waste of its resources. Instead, a country should allocate its resources most efficiently, in other words, concentrate on the things that it can do best. By doing so, it can gain a comparative advantage.

Two countries of the same size, Alpha and Omega, make two goods: cars and PCs. Alpha's production possibility frontier is 50,000 cars, Omega's 20,000. If Alpha allocated all its resources to making computers, it could output 200,000, while Omega could produce 100,000 units. Alpha has an *absolute advantage* in both industries as it makes cars *and* computers more efficiently than Omega.

However, Alpha has a bigger edge in car making: its *opportunity cost* of making a car is lower than Omega's. Omega can build 50 PCs in the same time it takes to make a car, while Alpha can only make 40. So Alpha could drop PC production, and Omega could concentrate on making PCs, as it has a *comparative advantage* in computer manufacture:

If the countries trade freely at a mutually favourable price, both stand to gain from specialisation. Alpha can buy more PCs in exchange for its car exports, and Omega can import more cars in return for its PC exports.

It is virtually impossible for a country to have no comparative advantage at all. It may be the least efficient at everything, but it will still have a comparative advantage in the field in which it is relatively least bad. It could then specialise in that field, and in the long run, reap further benefits because a country's comparative advantage is not static: if a country sees its income grow as a result of some comparative advantage, it can invest the returns in better education and infrastructure. These investments, in turn, may give it a comparative advantage in other economic activities in future.

3.10 The Monetary System

The Gold Standard

Before World War I, the gold standard – adopted in the 19th century by most major powers – obliged a country to fix the value of its currency in terms of a specified amount of gold. Banknotes and other forms of money were convertible into gold at this price.

The gold standard was suspended at the outbreak of World War I in order to finance the war effort. After the end of World War I, nations attempted to revive the gold standard, but it collapsed entirely during the Great Depression of the 1930s. Some economists blame the gold standard for the depression, saying that it had prevented monetary authorities from expanding the money supply rapidly enough to revive economic activity.

The Bretton Woods System

In July 1944, monetary experts from all Allied nations gathered in Bretton Woods, N.H. to lay down the rules for financial relations among the world's major industrial countries. The new order, which became known as the Bretton Woods system, was intended to avoid the recurrence of hyperinflation and a major depression after the end of World War II.

Under the Bretton Woods system, each country was obliged to maintain the value of its currency in terms of gold within plus or minus one per cent. The price of gold was fixed at $35 per ounce, and all currencies were pegged to the U.S. dollar: 1 British Pound exchanged for 2.80 U.S. dollars, and in the 1950s, the Austrian currency was tied to the U.S. dollar at a rate of 26 schillings.

If a country's currency rose more than one percent relative to the dollar, its central bank would intervene by selling its currency in exchange for dollars. Thus the value of its currency fell in accordance with the laws of supply and demand. Conversely, if the value of a country's money dipped more than one-per cent, the country would buy its own currency, thereby driving up the price.

By the early 1970s, inflation in the United States and a growing U.S. trade deficit, notably with Germany and Japan, had undermined the value of the dollar. The U.S. government urged both nations to appreciate their currencies, but both Germany and Japan were reluctant to do so. They feared that raising the value of their currencies would hurt their exports.

In 1971, the United States unilaterally terminated convertibility of the dollar to gold, allowing it to "float," i.e. to fluctuate, against other currencies. As a result, the dollar dropped, and world leaders sought to revive the Bretton Woods system. However, the effort failed, and by 1973, the United States and other nations agreed to allow exchange rates to float.

The European Monetary System

After the Bretton Woods system ended in 1973, most western European countries allowed their currencies to float. Generally, small countries with relatively large trade sectors dislike floating rates. In 1979 most of the members of the EEC entered the European Monetary System (EMS). Exchange rates were to be pegged to a European Currency Unit (ECU), made up of a basket of European currencies. However, there were three important differences from the old IMF system:

- the flexibility around the official rate was as much as 6 per cent;
- official rates were adjusted more quickly than the IMF par rates;
- the EMS currencies fluctuated as a group against the U.S. dollar.

The EMS failed within a few years of its inception, and in the late 1980s, the European Community started planning to replace national currencies with a single currency managed by a European Central Bank. The Maastricht Treaty (1991) defined a set of "convergence criteria" requiring countries to have:

- annual budget deficits not exceeding 3 percent of GDP;
- public debt under 60 percent of GDP;
- inflation rates within 1.5 per cent of the three lowest rates in the EC, and
- exchange-rate stability.

Although some countries failed to meet the convergence criteria (e.g., in Italy and Belgium public debt exceeded 120% of GDP), the Commission qualified nearly all members for monetary union. On 1 January 1999, 11 of 15 EU countries adopted the euro and relinquished control over their exchange rates. Denmark, Sweden, and the United Kingdom chose to retain their currencies, and Greece failed to qualify initially, but was admitted in 2001. (Big mistake, as it turned out in 2009.) Slovenia joined the eurozone in 2007, Cyprus and Malta in 2008, Slovakia in 2009, and Estonia introduced the euro in 2011.

Here are the exchange rates against the U.S. dollar on the first day of each year:

4 Revision

4.1 Complete each sentence with one of these terms.

scarcity – utility – macroeconomics – comparative advantage
competition – opportunity cost – demand and supply
price elasticity – microeconomics – production possibility frontier
demand – oligopoly – supply – monopoly

1 Price elasticity is the degree to which demand or supply reacts to a change in price, and it depends on how essential the good is to the consumer.

2 A monopoly is a market form in which there is only one seller for a product.

3 Market economy theories claim that demand and supply are the driving forces behind the most efficient allocation of resources.

4 The production possibility frontier is the upper limit at which a firm or a nation is most efficiently producing its goods and services.

5 In economic terms, scarcity is the tension between limited resources and unlimited wants and needs.

6 Microeconomics examines market forces on the level of various social groups, such as consumers, business firms, traders, and farmers.

7 Demand represents how much the buyers want, i.e. the quantity people are willing to buy at a certain price.

8 Utility is the "kick" you get out of a certain good or service.

9 The value of what is foregone in order to have something else is referred to as opportunity cost.

10 When a company or country allocates its resources most efficiently and concentrates on the things that it can do best, it can gain a cooperative advantage.

11 In a market economy, there are generally a number of different buyers and sellers, generating competition, which allows price to change in response to changes in supply and demand.

12 An oligopoly is a market or industry dominated by a small number of sellers.

13 Macroeconomics looks at the market forces that keep the economy functioning, including the total output of a nation and the way a nation allocates its limited resources in an attempt to maximize production levels and promote trade and growth for future generations.

14 Supply stands for how much the market can offer, i.e. the quantity producers are willing to provide in return for a certain price.

4.2 Complete the sentences with the appropriate terms.

1 Economists examine the way countries and individuals allocate their limited resources in an attempt to maximize production levels and promote trade and growth for future generations.
a. arrange *b. allocate* *c. access*

2 Analysing certain aspects of human behaviour, microeconomics helps explain variations in supply and demand.
a. variety *b. variations* *c. variables*

3 You only have limited resources at your disposal.
a. at your service *b. at your fingertips* *c. at* your disposal

4 Scarcity is the tension between limited resources and unlimited wants and needs.
a. unlimited *b. limiting* *c. limited* *d. limitless*

5 Individuals and countries have to make decisions as to what goods and services they can buy and which ones they must forego.
a. forego *b. forestall* *c. forewarn*

6 Market economy theories claim that demand and supply are the driving forces behind the most efficient allocation of resources.
a. driving range *b. drive* *c. driving forces*

7 The higher the price of a good, the less people will buy it.
a. less *b. more* *c. fewer*

8 The lower the price, the more the good will be in demand .
a. store *b. demand* *c. supply*

9 The law of supply deals with the quantities that will be sold at a certain price.
a. handles *b. deals* *c. plays*

10 The change in demand will raise prices in the long term.
a. raise *b. rise* *c. heighten*

11 Suppliers may expand their production facilities in order to meet the long-term levels of demand.
a. gain *b. reach* *c. meet*

12 The price of a good reflects the demand for it.
a. reveals *b. refutes* *c. reflects*

13 Individuals and countries must decide what combination of goods and services they produce in order to achieve a maximum return.
a. achieve *b. earn* *c. win*

14 The production possibility frontier is the upper limit at which a firm or a country is most efficiently producing its goods and services.
a. boundary *b. border* *c. limit*

15 If the company decided to use in-house talent to design a different product, it would divert a lot of resources from its core business.
a. divest *b. divert* *c. distract*

16 This would be a dangerous step for the manufacturer, because it risks falling behind in the development of products in its core business.
a. falling behind *b. falling out* *c. falling off*

17 Opportunity cost is the value of what is foregone in order to have something else.
a. foreshadowed *b. foregone* *c. forsaken*

18 Staple food is inelastic, because a price hike will only modestly affect demand.
a. hike *b. walk* *c. climb*

19 Marginal utility usually decreases with each additional increase in the consumption of a good.
a. increases *b. raises* *c. decreases* *d. collapses*

20 Producers in a perfectly competitive market are subject to the prices determined by the market and do not have any leverage.
a. motivation *b. worries* *c. leverage*

21 A country could aim to be self-sufficient by producing all the goods and services it needs to function.
a. self-sufficient *b. self-serving* *c. self-destructive*

22 Although it may be possible for a country to produce all the goods and services it needs, this would lead to a waste of its resources.
a. maximisation *b. optimisation* *c. waste*

23 By concentrating on the things it can do best, a country can gain a comparative advantage.
a. win *b. seek* *c. gain*

24 To make a car, Alpha's opportunity cost is 40 PCs, while Omega's is 50.
a. unit price *b. currency unit* *c. opportunity cost*

25 Although Alpha makes both cars and computers more efficiently than Omega, it has a bigger edge in car making.
a. edge *b. curve* *c. profit*

26 If a country sees its income grow as a result of some comparative advantage, it can invest in better education and infrastructure.
a. stabilise *b. invest in* *c. invest for*

27 The gold standard meant that banknotes and were exchangeable into gold at a fixed price.
a. interchangeable *b. exchangeable* *c. convertible*

28 The gold standard was suspended at the outbreak of World War I.
a. suspended *b. postponed* *c. adjourned*

29 Monetary experts gathered in Bretton Woods to lay down the rules for financial relations among the world's major industrial countries.
a. collected *b. meet* *c. gathered*

30 The Bretton Woods system was intended to avoid hyperinflation and a depression after the end of World War II.
a. intention *b. intended* *c. intensive*

31 In view of a growing trade deficit, the U.S. government urged Germany and Japan to stabilise their currencies.
a. devalue *b. stabilise* *c. appreciate*

32 In 1971, the U.S. allowed the dollar to float against other currencies. *a. float* *b. swim* *c. drift*

33 In 1979, exchange rates were pegged to a European Currency Unit (ECU), made up of a basket of European currencies.
a. pegged *b. fastened* *c. attached*

34 The EMS currencies fluctuated as a group against the U.S. dollar.
a. as a basket *b. as a crowd* *c. as a group*

35 As the EMS failed, the European Community started planning to introduce a single currency managed by a European Central Bank.
a. single currency *b. alternative currency* *c. hard currency*

36 The Maastricht Treaty of 1991 defined convergence criteria requiring countries to keep budget deficits, public debt and inflation low.
a. criterion *b. criteria* *c. criterions*

37 This would be a dangerous step for the manufacturer, because it risks falling behind in the development of new products in its core business.
a. falling behind *b. falling out* *c. falling off*

38 Opportunity cost is the value of what is foregone in order to have something else.
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a. motivation *b. worries* *c. leverage*

4.3 Study questions

1 What two developments in the late 1990s led some economists to proclaim the birth of a "New Economy"?

2 What was the major difference between the New Economy and the old economy it supposedly replaced?

3 What aspects of the old economy was the New Economy assumed to have eliminated?

4 When and why did the phrase "New Economy" fall into disuse?

5 Why is the definition "Economics is what economists do" regarded as the only foolproof description of the science of economics?

6 Why is economics considered a social science (like psychology and sociology, for example), and not a "hard" science like physics or chemistry?

7 What do economists study?

8 Why are economists interested in your personal spending habits?

9 What kinds of decisions can economists help governments make?

10 Whose behaviour is of primary interest to a macroeconomist and why?

11 Whose behaviour is of primary interest to a microeconomist and why?

12 Define what "scarcity" means in economic terms.

13 What kinds of resources do individuals have?

14 What kind of resources do countries have?

15 When our individual resources are limited, what kinds of decisions do we have to make?

16 When a country's resources are limited, what kinds of decisions does it have to make?

17 Is it a good idea for every country to aim for complete self-sufficiency by producing all the goods and services it needs to function? If so, why? If not, why not?

18 What strategy can help a country to gain a comparative advantage?

19 Can the least efficient country in the world still have any comparative advantage?

20 How can a country increase its comparative advantages?

21 What do economists mean by "demand"?

22 What do economists mean by "supply"?

23 What is "The Law of Demand"?

24 What is "The Law of Supply?"

25 What do producers have to determine about an increase in demand before they develop a strategy to meet it?

26 Provide an example of conditions which would result in a temporary increase in demand for a particular product.

27 Provide an example of conditions which would result in a permanent increase in demand for a particular product.

28 In a market economy, what does a producer and/or a country need to consider in order to achieve a maximum return on the allocation of their resources?

29 What is a firm or country's production possibility frontier (PPF)?

30 What would a company or country risk by hitting its PPF? Create an example to illustrate your point.

31 How would you define "opportunity cost"?

32 Why is opportunity cost important to the PPF? Create an example to illustrate your point.

33 How would you define "price elasticity"?

34 What kinds of goods are relatively inelastic, i.e. insensitive to price changes? Provide an example.

35 What kinds of goods are elastic, i.e. particularly sensitive to price changes? Provide an example.

36 What main factors affect price elasticity?

37 Please give a definition of the concept of utility.

38 What happens to your marginal utility as you increase your consumption of a good? Create an example to illustrate your point.

39 What circumstances create competition in a market economy?

40 What effect does competition have on prices, and what are the consequences for the consumer?

41 In what kind of situations are both the consumer and the supplier equally able to influence price?

42 In what kind of market form does the consumer have the least amount of influence over the price of goods?

43 What is a monopoly, and how does a monopolist maintain the status quo?

44 What is an oligopoly, and what kind of relationship do oligopolists have to each other? (!)

45 In what kind of economic system is it easiest for a new company to enter the market?

46 What is meant by "perfect competition"?

47 Is there such a thing as "perfect competition" in real life?

wealth_of_nations.pdf

1 The origins of Economics

Economics as a subject of modern study, distinguishable from moral philosophy and politics, dates from the work *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), by the Scottish philosopher and economist Adam Smith. The following excerpts offer just a few ideas contained in his work.

Self-interest as the driving force of economic activities:

> … man has almost constant occasion for the help of his brethren, and it is in vain for him to expect it from their benevolence only. He will be more likely to prevail if he can interest their self-love in his favour, and shew them that it is for their own advantage to do for him what he requires of them. Whoever offers to another a bargain of any kind, proposes to do this. Give me that which I want, and you shall have this which you want, is the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of. It is not from the benevolence of the butcher the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our own necessities, but of their advantages. Nobody but a beggar chooses to depend chiefly upon the benevolence of his fellow-citizens.
>
> *Book I, Chapter II.*

However, in Smith's definition of self-interest, there is no place for selfishness, which he considered inappropriate, if not immoral. A merchant's action is motivated by self-interest, but

> … he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest, he frequently promotes that of the society more effectually than when he really intends to promote it.
>
> *Book IV, Chapter II.*

Although Adam Smith believes in the ultimately positive effect of business, he is suspicious of the activities of members of the same trade:

> People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices. It is impossible, indeed, to prevent such meetings, by any law which either could be executed, or would be consistent with liberty and justice. But though the law cannot hinder people of the same trade from sometimes assembling together, it ought to do nothing to facilitate such assemblies, much less to render them necessary.
>
> *Book I, Chapter X.*

A fierce opponent of the old system of market protection, Smith advocates free trade, and wants government to keep out of economic affairs. The sovereign's duties should be limited to defending the country against outside enemies, and to protecting "every member of the society from the injustice or oppression of every other member of it."

Subordination and social inequality

In early societies, the primary reasons for superior social standing were personal qualities such as physical and intellectual capacities, appearance etc. As intellectual capacities combined with the experience of age resulted in wisdom, seniority became the next criterion of superiority. Strength, wisdom and age also generated wealth, the third condition of superiority. The ultimate reason for superiority was – and still is – birth, because a person born into a rich family can enjoy the privileges of wealth.

Smith reasons that the necessity for civil government grows in direct proportion to the affluence of a society. On the one hand, civil government protects the well-being and property, but on the other hand, requires all members of society to subordinate themselves to its authority. Although subordination is at the root of social inequality, many groups are involved in the development and support of civil government:

> The rich, in particular, are necessarily interested to support that order of things, which can alone secure them in the possession of their own advantages. Men of inferior wealth combine to defend those of superior wealth in the possession of their property, in order that men of superior wealth may combine to defend them in the possession of theirs.
>
> …
>
> Civil government, so far as it is instituted for the security of property, is, in reality, instituted for the defence of the rich against the poor, or of those who have some property against those who have none at all.
>
> *Book V, Chapter I.*

In order to finance the expenses of a civil government, Adams advocates fair taxation on the basis of an individual's income:

> The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to … the revenue which they respectively enjoy under the protection of the state.

The tax system must be fair and transparent, with as little bureaucratic overhead as possible, to keep contributors from evading taxes and smuggling:

> The tax which each individual is bound to pay, ought to be certain and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person.
>
> …
>
> Every tax ought to be so contrived, as both to take out and to keep out of the pockets of the people as little as possible, over and above what it brings into the public treasury of the state.
>
> *Book V, Chapter I.*

Sources: <http://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf>
<http://en.wikipedia.org/wiki/Adam_Smith>
Encyclopedia Britannica 2007

2 The Classical School

Adam Smith's theory continues with the British economists Thomas Robert Malthus and others, and culminates in the synthesis of John Stuart Mill. Although differences of opinion were numerous among the classical economists in the seven decades between Smith's *Wealth of Nations* (1776) and Mill's *Principles of Political Economy* (1848), the members of the Classical School followed Adam Smith's conclusions.

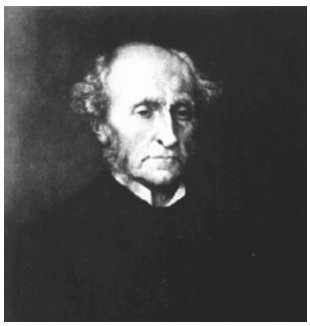
Thomas Malthus

They shared Smith's strong suspicion of government and his ardent confidence in the power of self-interest and his famous "invisible hand," the inexplicable mechanism which reconciles public benefit with individual pursuit of private gain. They also believed in private property, free markets, and the principle of competition.

The classical economists also accepted the *Law of Markets*, a doctrine of the French economist Jean Baptiste Say. It says that the danger of general unemployment or glut in a competitive economy is negligible because supply and demand will balance themselves by the limit of human labour and the natural resources available for production. Each enlargement of output adds to the wages and other incomes that constitute the funds needed to purchase added output.

Jean Baptiste Say

Mill's *Principles of Political Economy* was the leading text on the subject, from its publication in 1848 to the end of the 19th century. Although Mill accepted the major theories of his predecessors, he built a bridge between classical laissez-faire economics and an emerging welfare state. Unlike his predecessors, he had hope that the working class could be educated so that workers could eventually improve their living conditions.



John Stuart Mill

Mill was also a reformer: he suggested that government play a larger role in protecting children and workers, and favoured worker ownership of factories. He became also quite critical of contemporary business behaviour, and strongly supported the taxation of inheritance. This stance was in stark contrast to earlier views, when he described progressive taxation as "a mild form of robbery" penalising those who work harder. In 1869, four years before his death, he wrote in his essay *On the Subjection of Women* that:

> the principle which regulates the existing social relations between the two sexes – the legal subordination of one sex to the other – is wrong itself, and now one of the chief hindrances to human improvement; and that it ought to be replaced by a principle of perfect equality, admitting no power or privilege on the one side, nor disability on the other.

3 Marxism

Opposition to the classical school of economics came first from early socialist writers such as the French social philosopher the Comte de Saint-Simon and the British reformer Robert Owen. It was Karl Marx, however, who provided the most important social theories.

An exile from Germany, Marx conducted his research in the reading room of the British Museum. Marx's historical studies convinced him that profit and other property income are the proceeds from force and fraud inflicted by the strong on the weak.

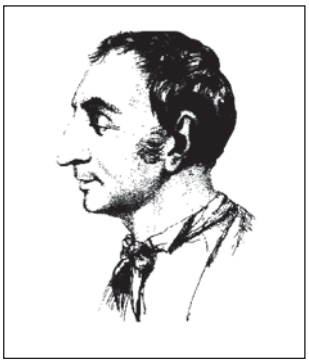
Marx's central conflict was between so-called capitalists who owned the means of production – factories and machines – and workers or proletarians who possessed nothing but their bare hands. Exploitation is at the heart of the Marxist doctrine. Marxist doctrine says that capitalists pay no more than subsistence wages to their employees, and capitalists make profits by keeping the difference between wages and selling prices of the goods produced.

Together with Friedrich Engels, Marx drafted the *Communist Manifesto* in 1848. They were convinced that the internal contradictions within capitalism would terminate its existence as earlier in history feudalism had disappeared. The clash between capitalism and socialism evolves into the higher stage of communism, which unites capitalist technology with social public ownership of factories and farms.

According to Marx, the crises of capitalism were certain to manifest themselves in falling rates of profit, mounting hostility between workers and employers, and ever more severe depressions. Class welfare was to brought about by revolution and progress toward, first, socialism and, ultimately, communism. In the first stage the state has to be strong in order to eliminate the remnants of capitalist opposition. Each person's work would be rewarded according to the value of his or her contribution. Once communism was achieved, the state, whose central purpose was class domination, would wither away, and each individual would – in the Utopian future – be compensated according to need.

The *Communist Manifesto* ends with a call to action:

> The Communists disdain to conceal their views and aims. They openly declare that their ends can be attained only by the forcible overthrow of all existing social conditions. Let the ruling classes tremble at a Communistic revolution. The proletarians have nothing to lose but their chains. They have a world to win.
>
> WORKING MEN OF ALL COUNTRIES, UNITE!



Comte de Saint-Simon

Robert Owen

Karl Marx

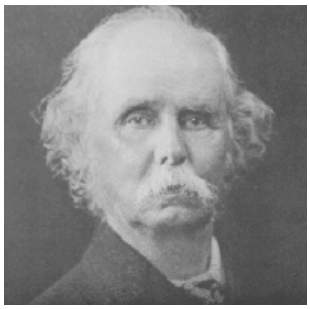
manifesto.pdf

4 The Neoclassicists

Neoclassicist economists concentrated on consumer choice. The core assumptions of neoclassic economics are:

- Consumers seek to maximise their satisfaction, and producers seek to maximise their profits.
- Consumers have unlimited wants and needs, and they prefer more to less and always want more.
- People behave in consistent, predictable ways. In other words, human behaviour is rational.
- People's tastes are fixed, however, people's preferences can and do change.

Alfred Marshall's *Principles of Economics* (1890) is representative of the neoclassical school. According to Marshall, consumers prefer low prices of goods, while sellers prefer high prices. In competitive markets, prices are adjusted to some mutually agreeable level. At this level, buyers purchase precisely the quantity of goods that sellers offer.



Alfred Marshall

As in markets for consumer goods, this same mechanism between supply and demand occurs in markets for money and human labour. In money markets, the interest rate matches borrowers with lenders. The borrowers expect to use their loans to earn profits larger than the interest they have to pay. Savers, for their part, demand a price for providing their own money. Similarly, wages paid for human labour are the smallest acceptable compensation to the employees for their work.

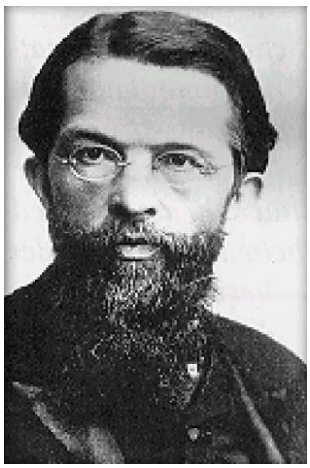
The tendency of neoclassical doctrine has been politically conservative, and its advocates prefer competitive markets to government intervention. At least until the Great Depression of the 1930s, neoclassicists insisted that the best public policies were low taxes, thrift in public spending, and annually balanced budgets.

Neoclassicists do not inquire into the origins of wealth. They explain disparities in income and wealth by parallel differences among human beings in talent, intelligence, energy, and ambition. This means that men and women succeed or fail because of their individual attributes, not because they either benefit from special advantages or suffer from special handicaps. In capitalist societies, neoclassical economics is the generally accepted explanation of price and income determination.

5 The Austrian School

Challenging British dominance

Despite the theoretical sophistication in Continental Europe, Adam Smith's followers prevailed for more than a century, mostly for political reasons. The first serious challenge to the dominant British tradition came in 1871, when Carl Menger published *Principles of Economics.* This book fully explained the theory of marginal utility for the first time.



Carl Menger

As professor at the University of Vienna, Menger restored economics as the science of human action based on deductive logic, and prepared the way for later theorists to counter the influence of socialist thought. Menger's follower Eugen von Boehm-Bawerk solidified the status of the Austrian School as a unified way of looking at economic problems.

Boehm-Bawerk's *Positive Theory of Capital* demonstrated that capital is not homogeneous, but an intricate and diverse structure that has a time dimension. A growing economy is not just a consequence of increased capital investment, but also of longer and longer processes of production. Also, he demonstrated that the normal rate of business profit is the interest rate. Capitalists save money, pay labourers, and wait until the final product is sold to receive profit.

Eugen von Boehm-Bawerk

In contrast to the positivist approach of British economists, Menger, Boehm-Bawerk and their followers strictly adhered to methodological individualism. This means that valid economic theory is logically derived from basic principles of human action. Their formal approach to theory combined with interpretive history enabled the Austrian School to discover economic laws valid for all human action and to address specific historical events.

A new approach to the business cycle

In 1912, a young economist, Ludwig von Mises, published *The Theory of Money and Credit*. The book explained how the theory of marginal utility applies to money, and presented the broad outline of the Austrian theory of the business cycle. In 1919, he published *Nation, State, and Economy*, arguing on behalf of the economic and cultural freedoms of minorities in the now-shattered empire, and spelling out a theory of the economics of war.

Ludwig von Mises

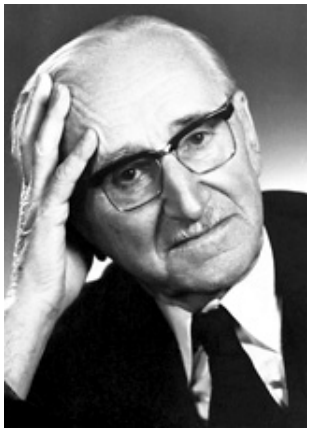
Together with his student Friedrich Hayek, Mises later authored further studies on the business cycle, warning of the danger of credit expansion, and predicting the coming currency crisis. This work was cited by the Nobel Prize committee in 1974 when Hayek received the award for economics.

They argued that the business cycle is not inherent to an unregulated economy. Rather, the ups and downs are caused by government intervention in the money

supply, which causes interest rates to be higher or lower than they should actually be. The interest rate is the price of investment capital, which guides investment decisions. In a free-market economy, the interest rate reflects the actual time preference of lenders and borrowers. This means that people who have money are willing to lend money for a certain period in return for a certain interest rate. The rate must be acceptable to both the lender and the borrower.

Government interference in the money supply disturbs this equilibrium such that the interest rate no longer reflects the real supply of and demand for investment capital. Therefore, if the interest rate is kept artificially low, the demand for loans will be higher than the actual supply of willing lenders; if the interest rate is higher than it should be, the opposite will occur. This leads investors to borrow and invest either too much or too little in long-term projects. Thus periodic recessions are the market's natural mechanism of undoing the misallocation of resources, and such "corrections" are positive, because unprofitable investments are liquidated, freeing capital for new investment.

Furthermore, artificially low interest rates, and the resulting increase in the supply of credit generate inflation, which oblige the central bank to increase the supply of credit yet further to maintain the artificially low interest rate, thus prolonging the "boom" and worsening the inevitable "correction." A recent example of artificially low interest rates subsidising overinvestment was the dot-com frenzy in the late 1990s.



Friedrich Hayek

The end of the Austrian School

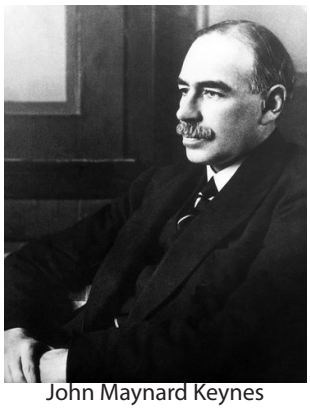
When the threat of a Nazi takeover became imminent in Austria, all scholars – sworn enemies of national socialism – decided to leave the country. Hayek went to London in 1931, and in the following year, Joseph Schumpeter emigrated to the United States, teaching at Harvard till his death in 1950. In 1934, Mises moved to Geneva, and later emigrated to the United States.

What is left of the Austrian School? Alan Greenspan, long-time Chairman of the Federal Reserve, said in 2000 that its members "have reached far into the future … and have had a profound and, in my judgement, probably an irreversible effect on how most mainstream economists think in this country."

Indeed, the ideas of the Austrian school influenced Keynesian economics. Keynes acknowledged the impact of some Misesian notions. In addition to Mises' ideas, many of Hayek's concepts, particularly those relating time to the value of capital and its importance, found their way into the work of Keynesian economists.

Ironically, Hayek later became a prime opponent of Keynesian economics, writing books on exchange rates, capital theory, and monetary reform. His popular book *Road to Serfdom* helped revive the liberal movement in America and in Great Britain. And his series *Law, Legislation, and Liberty* criticised egalitarianism and nostrums like social justice.

6 Keynesian Economics


John Maynard Keynes

Background

John Maynard Keynes was a student of Alfred Marshall and an exponent of neoclassical economics until the 1930s. The Great Depression bewildered economists and politicians alike, and leading economists said that time and nature would bring back prosperity. Therefore, government should keep from interfering in the economy. However, the situation became worse and worse.

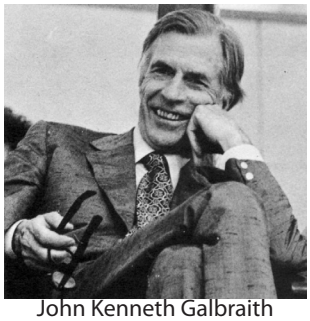
New explanations and fresh policies were urgently required, and this was precisely what Keynes supplied. In his work *The General Theory of Employment, Interest, and Money*, the central message translates into two powerful propositions. (1) Existing explanations of unemployment are nonsense: Neither high prices nor high wages could explain persistent depression and mass unemployment. (2) Instead, he proposed an alternative explanation of these phenomena focused on what he termed **aggregate demand** – that is, the total spending of consumers, business investors, and governmental bodies. When aggregate demand is low, he theorised, sales and jobs suffer; when it is high, all is well and prosperous.

From these generalities flowed a powerful and comprehensive view of economic behaviour – the basis of contemporary **macroeconomics**. Because consumers were limited in the amounts that they could spend by the size of their incomes, they could not be the source of the ups and downs of the business cycle. It followed that the dynamic forces were business investors and governments. In a recession or depression, the proper thing to do was either to enlarge private investment or create public substitutes for the shortfalls in private investment. In mild economic contractions, easy credit and low interest rates might stimulate business investments and restore aggregate demand to ensure full employment. More severe contractions required deliberate budget deficits either in the form of spending on public works or subsidies to afflicted groups.

The Keynesian tradition gave government the responsibility for stabilising an unruly economy. Keynesians developed the notion of a fiscal/monetary mix to control spending and the balance of payments simultaneously. Judicious, well-timed changes in taxes and government spending were to be balanced against propitious changes in money to control the economy. Economists devised tools for choosing between inflation and unemployment, and if the choice didn't work out as intended, Keynesians relied on informal price and wage controls. Under flexible exchange rates they urged international policy coordination and selective exchange-market intervention to manage the global economy. In these and other ways they presented economists as engineers who adjust the controls and, when necessary, design new controls to maintain just the right mix of policies.

The good life beckons

Read the excerpt from an talk by American economist J. K. Galbraith published in the *New Statesman* in January 1994.



John Kenneth Galbraith

The good society accepts the basic market system and its managers, but there are some things the market system does not do either well or badly. In the good society these are the responsibility of the state.

Some areas of state action are evident, In no country does the market system provide good low-cost housing, This is a matter of prime importance and must everywhere be a public responsibility, Few things are more visibly at odds with the good society than badly housed or homeless people.

Health care is also a public responsibility in all civilised lands. No one can be assigned to illness or death because of poverty. Here Britain can proudly point to its leadership.

The state has many other essential functions. It must also be borne in mind that many of these – parks and recreational facilities, police, libraries, the arts, others – are more needed by the underclass than by the affluent. Those who attack the services of the state are usually those who can afford to provide similar services for themselves.

In the good society, there must also be attention to a range of activities that are beyond the time horizons of the market economy. This is true in the sciences, not excluding medical research. The market system invests for relatively short-run return. To support science is pre-eminently the responsibility of the state.

Some of the truly important industrial achievements of recent generations – the great improvements in agricultural productivity, modern air transport, advanced electronics – have depended heavily on such public investment. Necessary also – a matter we are beginning reluctantly to recognize – is investment and regulation in the longer-run interest of the environment. The good society protects and improves life in its planetary dimension.

List important areas that should be responsibilities of the state:

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

7 Monetarism

Background

Keynesian forecasts of spending, output, prices, and inflation proved to be unreliable. Systematic studies of forecasting accuracy show that on average forecasters have been unable to distinguish between booms and recessions a quarter or a year ahead, so they are as likely to mislead as to benefit policy makers. The records of the Federal Reserve that have become available show that during the period of rising inflation, annual inflation was always underpredicted. When inflation fell in the eighties, the Federal Reserve persistently predicted too high an inflation rate. A vast amount of research has shown that econometric models cannot accurately forecast interest rates and exchange rates. This research concludes that changes in interest rates and exchange rates are caused mainly by unforeseen changes in policy and in the economy.

The principal monetarist propositions are:

- Sustained money growth in excess of the growth of output produces inflation.
- Therefore, to end inflation or produce deflation, money growth must fall below the growth of output.
- When inflation is expected to be high, interest rates on the open market are high and the foreign-exchange value of a currency falls relative to more stable currencies.
- The first effects of changes in money growth are on output; later, the rate of inflation changes.

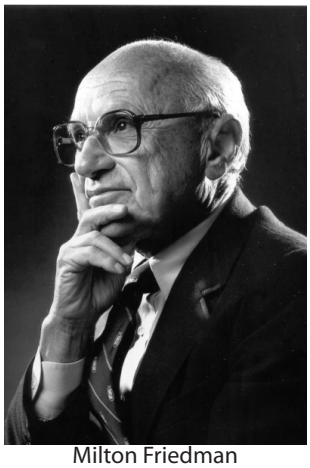
These monetarist propositions about inflation, interest rates, exchange rates, and output are now widely accepted, and many central bankers have adopted targets or guidelines for money growth.

Monetarists favour stable policy rules that reduce variability and uncertainty for private decision makers. They argue that government serves the economy best by enhancing stability and acting predictably, not by trying to engineer carefully timed changes in policy actions. Monetarists saw such efforts as frequently doing the opposite of what they were supposed to do.

Although monetarism is alive, it encounters considerable scepticism and contrary opinions. One reason for the scepticism is that the critics and the monetarists have very different policy agendas. The critics see government policy action as a way of removing instability caused by unruly private behaviour. They have long advocated activist policies to control spending.

Free to choose

Read the following extract from Friedman's book *Free to Choose*, and compare and contrast Friedman's opinion of the role with with Galbraith's views on the previous page.



Milton Friedman

Though the United States has not adopted central economic planning, we have gone very far in the past 50 years in expanding the role of government in the economy. That intervention has been costly in economic terms. The limitations imposed on our economic freedom threaten to bring two centuries of economic progress to an end. Intervention has also been costly in political terms. It has greatly limited our human freedom…

An essential part of economic freedom is freedom to choose how to use our income: how much to spend on ourselves and on what items; how much to save and in what form; how much to give away and to whom. Currently, more than 40% of our income is disposed of on our behalf by government at federal, state and local levels combined…

As consumers, we are not even free to choose how to spend that part of our income that is left after taxes. We are not free to buy cyclamates or laetrile, and soon, perhaps, saccharin. Our physician is not free to prescribe many drugs for us that he may regard as the most effective for our ailments, even though the drugs may be widely available abroad. We are not free to buy an automobile without seat belts…

Another essential part of economic freedom is freedom to use the resources we possess in accordance with our own values – freedom to enter any occupation, engage in any business enterprise, buy from or sell to anyone else, so long as we do so on a strictly voluntary basis and do not resort to force in order to coerce others.

Today you are not free to offer your services as a lawyer, a physician, a dentist, a plumber, a barber, a mortician, or engage in a host of other occupations, without first getting a permit or licence from a government official. You are not free to work overtime at terms mutually agreeable to you and your employer, unless the terms conform to rules and regulations laid down by a government official.

You are not free to set up a bank, go into the taxicab business, or the business of selling electricity or a telephone service, or running a railroad, busline, or airline, without first receiving permission from a government official…

Freedom cannot be absolute. We do live in an interdependent society. Some restrictions on our freedom are necessary to avoid other, still worse, restrictions. However, we have gone far beyond that point. The urgent need today is to eliminate restrictions, not add to them.

Do you agree with Friedman's view of government only limiting personal freedom? Why (not)?

8 Quiz – the six major economic theories

Match these statements with one of the previously described schools:

1 The founding father of this economic theory was a Scottish philosopher.

2 This economic school concentrates on consumer choice.

3 This theory is logically derived from basic principles of human action.

4 This theory deals with the phenomen of aggregate demand.

5 This economic theory provides the basis for macroeconomics.

6 This theory opposed the ideals of the Classical School.

7 Carl Menger was the founding father of this economic theory.

8 This economic theory concerns itself primarily with issues of inflation, deflation and interest rates.

9 This school grew out of the Great Depression of the 1930s.

10 A member of this school helped revive the liberal movement in America and in Great Britain.

11 This school is the generally accepted one in capitalist societies to explain price and income levels.

12 Alfred Marshall is representative of this economic school.

13 French economist Jean Baptiste Say was a key contributor to this theory.

14 The idea of the "invisible hand" which guides the market and a strong suspicion of government are representative of this school.

15 The Communist Manifesto contributed to the philosophy of this theory.

16 Advocates of this economic theory prefer competitive markets to government intervention.

17 The French social philosopher the Comte de Saint-Simon and the British reformer Robert Owen opened the door to this theory.

18 One of this school's central assumptions is that consumers have unlimited wants and needs; they *always* prefer more to less.

19 The members of this school left their home country in the 1930s.

20 *Principles of Political Economy* made a major contribution to this school.

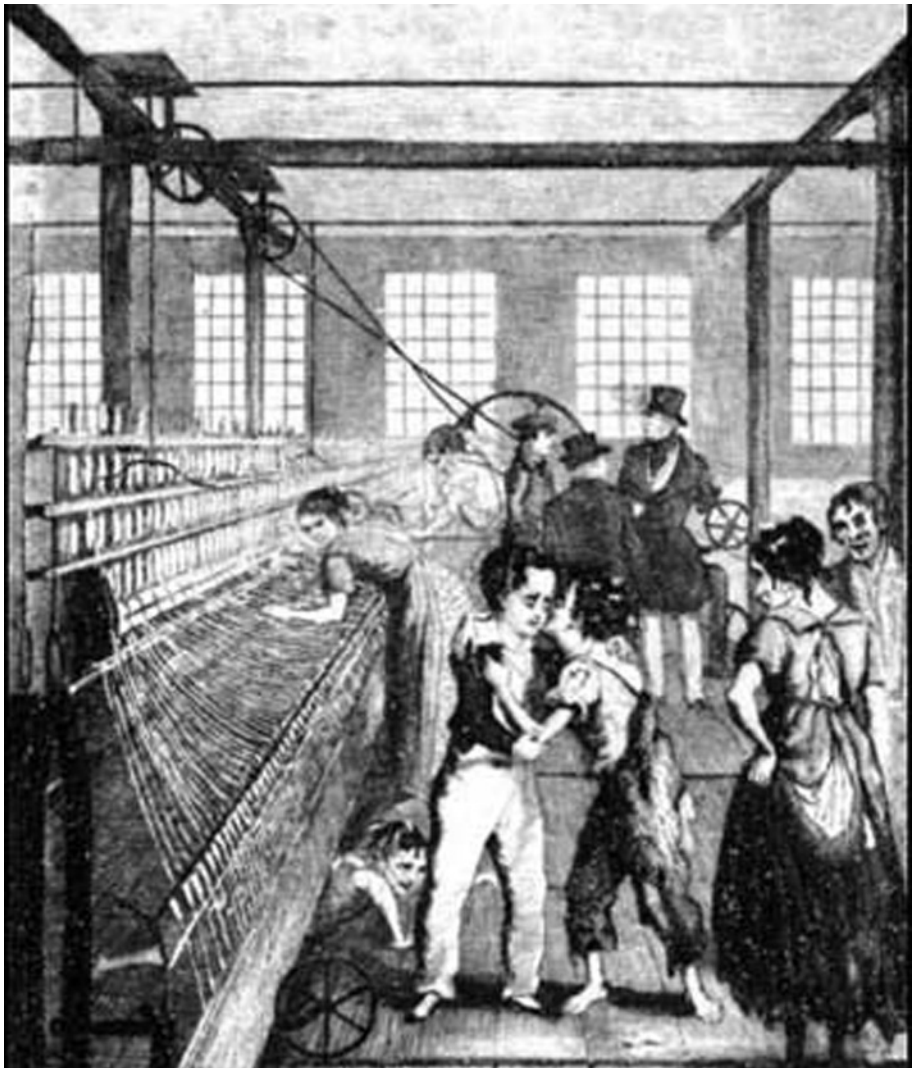
21 The conflict between the so-called capitalists and the proletarians is central to this economic doctrine.

22 This economic theory gives the government the responsibility for stabilising an unruly economy.

23 "Working men of all countries, unite!" is a slogan of this school.

24 This economic school provided a first explanation of the business cycle.

1 Glimpses of 19th-century Britain



The *Industrial Revolution* describes the development from 1760 to 1840 in which Britain changed from an agrarian, handicraft economy to one dominated by industry and machine manufacture.

The rapid development of large-scale manufacturing resulted in the exploitation of the new class of factory workers. They were kept almost like slaves, and children from poor families had to work from an early age on.

The social movement, which began at the end of the 18th century, included steps to regulate child labour. The law of 1802 was aimed at controlling the apprenticing of pauper children to cotton-mill owners, but it was ineffective because it did not provide for enforcement. Following are extracts from reports and interviews with people who had worked in textile factories as children.

1.1 Child labour in 19th-century England

The youngest children in the textile factories were usually employed as scavengers and piecers. Scavengers had to pick up the loose cotton from under the machinery. This was extremely dangerous as the children were expected to carry out the task while the machine was still working. Piecers had to lean over the spinning-machine to repair the broken threads, and thereby walked about twenty miles a day:

> *"At a meeting in Manchester a man claimed that a child in one mill walked twenty-four miles a day. I was surprised by this statement, therefore, when I went home, I went into my own factory, and with a clock before me, I watched a child at work, and having watched her for some time, I then calculated the distance she had to go in a day, and to my surprise, I found it nothing short of twenty miles."*

It was common for children to be working for over twelve hours a day:

> *Q What were your hours of labour?*
> *A From five in the morning till eight at night.*
> *Q You had fourteen and a half hours of actual labour, at seven years of age?*
> *A Yes.*
> *Q Did you become very drowsy and sleepy towards the end of the day?*
> *A Yes; that began about three o'clock; and grew worse and worse, and it came to be very bad towards six and seven.*

Children who were late for work were severely punished:

> *"I worked from five in the morning till nine at night. I lived two miles from the mill. We had no clock. If I had been too late at the mill, I would have been quartered. I mean that if I had been a quarter of an hour too late, a half an hour would have been taken off. I only got a penny an hour, and they would have taken a halfpenny."*

Time-keeping was a problem for those who could not afford to buy a clock:

> *"In the Christmas holidays of 1731 snow was followed by a sharp frost. A thaw came on in the afternoon of the 27th, but in the night the ground was again caught by a frost, which glazed the streets. I did not awake, the next morning, till daylight seemed to appear. I rose in tears, for fear of punishment, and went to my father's bedside, to ask the time. He believed six; I darted out in agonies, and from the bottom of Full Street, to the top of Silk Mill Lane, not 200 yards, I fell nine times! Observing no lights in the mill, I knew it was an early hour, and the reflection of the snow had deceived me. Returning, the town clock struck two."*

In some factories workers were not even allowed to carry a watch:

> *"I worked at Mr. Braid's Mill at Duntruin. We worked as long as we could see. I could not say at what hour we stopped. There was no clock in the mill. There was nobody but the master and the master's son had a watch and so we did not know the time. The operatives were not permitted to have a watch. There was one man who had a watch but it was taken from him because he told the men the time."*

The above rule was an attempt to trick children out of some of their wages:

> *"In reality there were no regular hours, masters and managers did with us as they liked. The clocks in the factories were often put forward in the morning and back at night. Though this was known amongst the hands, we were afraid to speak, and a workman then was afraid to carry a watch."*

Factory owners provided their pauper apprentices with food:

"Our common food was oatcake. It was thick and coarse. This oatcake was put into cans. Boiled milk and water was poured into it. This was our breakfast and supper. Our dinner was potato pie with boiled bacon it, a bit here and a bit there, so thick with fat we could scarce eat it, though we were hungry enough to eat anything. Tea we never saw, nor butter. We had cheese and brown bread once a year. We were only allowed three meals a day though we got up at five in the morning and worked till nine at night."

The long working hours had ill effects on the children's health:

Q How long was it before the labour took effect on your health?
A Half a year.
Q How did it affect your limbs?
A When I worked about half a year a weakness fell into my knees and ankles: it continued, and it got worse and worse.

"I have frequently worked at the frame till I could scarcely get home, and in this state have been stopped by people in the streets who noticed me shuffling along, and advised me to work no more in the factories; but I was not my own master. During the day, I frequently counted the clock, and calculated how many hours I had still to remain at work; my evenings were spent in preparing for the following day – in rubbing my knees, ankles, elbows, and wrists with oil, etc. I went to bed, to cry myself to sleep, and pray that the Lord would take me to himself before morning."

Workers' safety was not a concern:

"There are factories, no means few in number, nor confined to the smaller mills, in which serious accidents are continually occurring, and in which, notwithstanding, dangerous parts of the machinery are allowed to remain unfenced... [The workers were often] abandoned from the moment that an accident occurs; their wages are stopped, no medical attendance is provided, and whatever the extent of the injury, no compensation is afforded."

"… one evening, her apron was caught by the shaft. In an instant the poor girl was drawn by an irresistible force and dashed on the floor. She uttered the most heart-rending shrieks! Blincoe … saw her whirled round and round with the shaft – he heard the bones of her arms, legs, thighs, etc. successively snap asunder, crushed, seemingly, to atoms, as the machinery whirled her round, and drew tighter and tighter her body within the works, her blood was scattered over the frame and streamed upon the floor, her head appeared dashed to pieces…"

One hospital reported that every year it treated nearly a thousand people for wounds and mutilations caused by machines in factories, and a German visitor to Manchester wrote in his diary in 1842:

"I saw so many people in the streets of Manchester without arms and legs that it was like living in the midst of the army just returned from a campaign."

Children who worked long hours in the textile mills became very tired and found it difficult to maintain the speed required by the overlookers. Children were usually beaten to make them work faster:

"There was a young woman, Sarah Goodling, who was poorly and so she stopped her

machine. James Birch, the overlooker knocked her to the floor. She got up as well as she could. He knocked her down again. Then she was carried to the apprentice house. Her bed-fellow found her dead in bed."

Children were dipped head first into water if they became drowsy:

"When I was seven years old I went to work at Mr. Marshalls factory at Shrewsbury. If a child was drowsy, the overlooker touches the child on the shoulder and says, 'Come here'. In a corner of the room there is an iron cistern filled with water. He takes the boy by the legs and dips him in the cistern, and sends him back to work."

Children were also punished for arriving late for work:

Q Were you sometimes late?

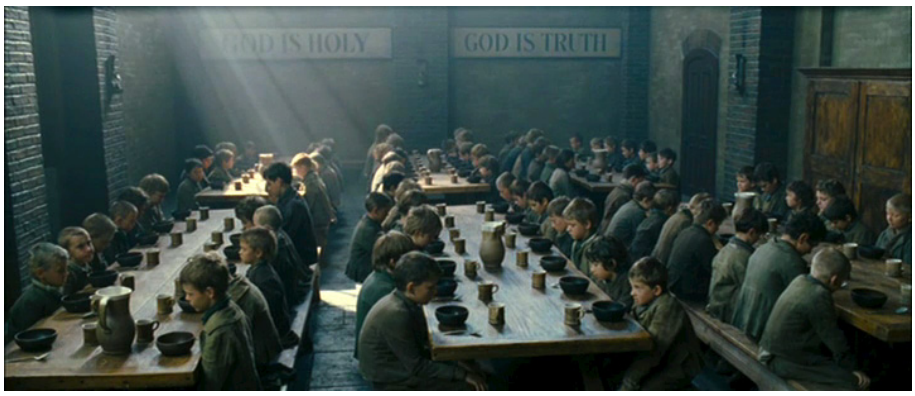
A Yes, and if we were five minutes too late, the overlooker would take a strap, and beat us till we were black and blue.

Apprentices who ran away from the factory frequently ended up in prison, and potential runaways were placed in irons:

"The blacksmith had the task of riveting irons upon any of the apprentices, whom the master ordered. These irons were very much like the irons usually put upon felons. Even young women, if they suspected of intending to run away, had irons riveted on their ankles, and reaching by long links and rings up to the hips, and in these they were compelled to walk to and fro from the mill to work and to sleep."

Adapted from: Encyclopedia Britannica 2005
<http://www.spartacus.schoolnet.co.uk/>

1.2 Oliver Twist



twist.mov

Oliver Twist shows the bleak social conditions that characterise 19th-century England, and how the poor – the vast majority of the population – had to fight for survival.

In a fearsome thunderstorm, Agnes – a woman about to give birth – staggers across the English moors to the parish workhouse. There, Oliver Twist is born. Orphaned at birth, he spends his childhood years in the workhouse. Food is scant, and one day, Oliver Twist goes and asks for an extra helping at a mealtime, "Please, sir, I want some more." As a result of this step, he is apprenticed to Mr. Sowerberry, the undertaker.

Unhappy and mistreated, Oliver runs away. In London, he meets The Artful Dodger. The slightly older boy takes Oliver to the hideout of a London gang of juvenile delinquents. Looked after by Fagin, an old Jew who teaches them the finer points of pick-pocketing, the boys roam the city by day practising their trade. Also associated with the gang are the sinister Bill Sikes and his soft-hearted girlfriend, Nancy. Oliver, too, learns to steal, but he is caught on one of his first lone attempts.

Oliver Twist is taken to the police station, where a kindly and wealthy old gentleman, Mr. Brownlow, intervenes on the boy's behalf. Planning to educate and care for the boy, Mr. Brownlow takes custody of Oliver. Bill Sikes and a mysterious man named Monks learn of Oliver's newly acquired position and see an opportunity to rob the Brownlow house, using Oliver to let them in.

They kidnap Oliver and return with him to the gang. When Nancy tries to return Oliver to Mr. Brownlow, she is brutally murdered by Sikes. The attempted robbery fails, and Sikes drags Oliver over the rooftops of London as he is pursued by the police and an enraged torch-carrying mob. Sikes falls and hangs himself. Oliver is rescued and returns to Mr. Brownlow to discover that he is the lost grandson Brownlow has been seeking.

2 Revival of 19th-century values

Margaret Thatcher was British Prime Minister from 1979 to 1990. She was a highly ideological leader – she once slammed a copy of Hayek's *The Constitution of Liberty* down on a table during a meeting, saying, "This is what we believe."

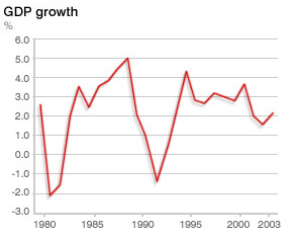
She believed in a free market economy, monetarist economic policy, privatisation of state-owned industries, lower direct taxation and higher indirect taxation, opposition to trade unions, and a reduction of the size of the welfare state. And she was deeply in favour of individualism over collectivism, with self-reliance as a mantra. Milton Friedman once said about Margaret Thatcher that she "is not in terms of belief a Tory. She is a nineteenth-century Liberal." This claim was supported by Margaret Thatcher herself in an interview:

> I was brought up by a Victorian grandmother. We were taught to work jolly hard. We were taught to prove ourselves. We were taught self-reliance. We were taught to live within your income. We were taught that cleanliness was next to godliness. Uhm, you were taught self-respect. You were taught to always give a hand to your neighbour. You were taught tremendous pride in your country. You were taught to be a good member of your community. All these things are Victorian values…
>
> They're perennial values as well.

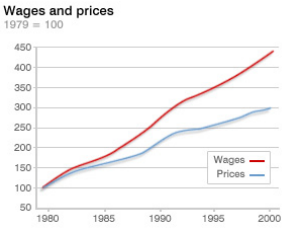
thatcher.m4a

2.1 The Thatcher years in review

Growth – In pure output terms, Britain's economy did not exactly catch fire during the 1980s. In fact, average annual GDP growth during the Thatcher years was 2.2%, compared with 2% under John Major and 2.5% under Tony Blair.



Incomes – Wages grew rapidly; most importantly, they significantly outpaced increases in prices. Real wages – incomes minus inflation – are still growing in the UK, but the net growth is now not much higher than the EU average.



Unemployment – Critics say that brutal deregulation and tight monetary policy made UK workers vulnerable to the 1980s slump. Supporters, however, insist that high oil prices and the strong pound were more to blame.

Inequality – Whether or not the poor got poorer, the rich certainly got richer. Throughout the 20th century, economic inequality – the proportion of income controlled by the top earners – was moderating. Through tax cuts, that was sharply reversed under Mrs Thatcher.

Source: <http://news.bbc.co.uk/1/hi/in_depth/4447082.stm>

2.2 Wall Street – 1987 and 2009

The first film portrays the inner working and the excesses of the 1980s on Wall Street, the financial centre of the world. Bud Fox, a young stockbroker desperate to get to the top, concocts a plan to work for Gordon Gekko, an extremely successful but unscrupulous corporate raider.

The second film, released in 2009, paints a different picture of Gordon Gekko. Watch both films and use the study questions to compare and contrast them.

wallstreet.mov

QUESTIONS AND TOPICS FOR STUDY:

- **Characterise:**
  Bud Fox
  Gordon Gekko
  Dad

- **"Greed Is Good."**
  Give examples of how those three words define our era.

- **Wall Street gives you a glimpse of worlds that exist to few.**
  What is your reaction to such an display of extreme wealth?

- **"Lunch is for wimps." – "If you need a friend, get a dog."**
  What is behind Gekko's legendary statements?

- **How has the relationship between Bud and Gekko changed?**
  Why does Bud approach Gekko?
  Why is Gekko interested in Bud?

- **How does Wall Street 1987 compare to Wall Street 2009?**

3 Rich worker – poor worker

Compare the fates of two Americans who worked for the same corporation:

By the time Bethlehem Steel Corp.'s former chief executive, Duane R. Dunham, was forced to retire after only 18 months in the top spot, the giant steelmaker was bankrupt and headed for a fire sale.

But that didn't stop Bethlehem from handing Dunham a $2.5-million going-away gift. The package included about $500,000 to cover the taxes that he'd have had to pay on his company-funded retirement plan.

Unlike Dunham, Ron Burtless never aspired to the executive suite. Instead, almost three decades ago, he reached for a union card and went to work as an electrician at a Bethlehem Steel Corp. plant in Indiana. For a long time, he seemed the very embodiment of Middle American stability, with a $60,000 annual wage, two grown daughters, a red Ford pickup and a five-bedroom suburban home.

But in a matter of just two weeks last year, Burtless' finances were thrown into disarray when Bethlehem collapsed and, adding injury to insult, he was badly hurt on the job and saddled with more than $90,000 in medical bills. Having fallen through cracks in the workers' compensation system, he now ponders a wrenching question: "Am I going to have to go bankrupt?"

Now discuss the consequences of the following facts:

1 *In their own ways, the fates of Dunham and Burtless can be traced to the same source – a set of economic policies intent on creating a more prosperous America.*

2 *Promising a CEO plenty of protection helps ensure that he or she will act in the interest of the company – even if that means taking steps that could cost the executive his or her job.*

3 *More than 300 chief executives among the Standard & Poor's 500 companies have contracts that promise the equivalent of one year or more of salary and benefits if they leave their jobs. By contrast, only half of these companies have any formal severance packages for non-executive employees, with the typical package ranging from $14,000 to $27,000.*

4 *Advocates of the "Ownership Society" propose tax-break-heavy accounts to let families pay for their own retirements, health care and job training, and they call for partially replacing Social Security with privately held stock and bond accounts.*

Source: Los Angeles Times, *The New Deal*, October 10, 2004

Starting in the late 1970s, the nation's leaders sought to break a corrosive cycle of rising inflation and stagnating output by remaking the U.S. economy in the image of its frontier predecessor – deregulating industries, shrinking social programs and promoting a free-market ideal in which everyone must forge his or her own path, free to rise or fall on merit or luck. On the whole, their effort to transform the economy has succeeded.

But the economy's makeover has come at a large and largely unnoticed price: a measurable increase in the risks that Americans must bear as they provide for their families, pay for their houses, save for their retirements and grab for the good life.

A broad array of protections that families once depended on to shield them from economic turmoil – stable jobs, widely available health coverage, guaranteed pensions, short unemployment spells, long-lasting unemployment benefits and well-funded job training programs – have been scaled back or have vanished altogether.

"Working Americans are on a financial tightrope," said Yale University political scientist Jacob S. Hacker, who is writing a book called "The Great Risk Shift." "Business and government used to see it as their duty to provide safety nets against the worst economic threats we face. But more and more, they're yanking them away."

Nowhere is the risk shift of the last quarter century more apparent than in the widening swings in working families' incomes.

Although average family income adjusted for inflation has risen in recent decades, the path that most households have followed has hardly been a steady line upward – the historical norm for most of the post-World War II era. Instead, a growing number of families have found themselves caught on a financial roller coaster ride, with their annual incomes taking increasingly wild leaps and plunges over time.

In the early 1970s, the inflation-adjusted incomes of most families in the middle of the economic spectrum bobbed up and down no more than about $6,500 a year, according to statistics generated by the Los Angeles Times in cooperation with researchers at several major universities. These days, those fluctuations have nearly doubled to as much as $13,500, the newspaper's analysis shows.

This growing volatility – and the rising risk it signals – has cut a wide swath. It has touched families from the working poor to those near the top of the earnings pyramid. The shifting of risk, in other words, is proving to be a democratic phenomenon.

Further reading at: <http://www.latimes.com/business/la-fi-riskshift3oct10,1,5915831,print.story?coll=la-home-headlines>

4 The stark reality of iPod's Chinese factories

The Mail ON SUNDAY 24 HOURS A DAY
18 August 2006

It has come to define a generation. In just five years, Apple's iPod has become one of the most popular and iconic gadgets around. More than two million people in Britain own one, and last year alone 22.5 million were bought worldwide: a phenomenal 61,644 a day. The distinctive digital audio players – which can store thousands of songs, photos and even full-length films – have turned California-based Apple into one of the world's most profitable companies, earning founder Steve Jobs a $3 billion fortune. Last year Apple achieved a record billion-dollar profit, boosted by the launch of its latest Nano model, which is the width of a pencil and weighs just 1.5oz. A million Nanos were sold in just 17 days, including one to Pope Benedict XVI.

But have you ever wondered where your iPod is made, and what's in it? The Mail on Sunday has traced the incredible journey an iPod makes from conception to completion, and uncovers the harsh working conditions in the Chinese factories where iPods are made. Although it is one of America's most prestigious brands, nearly all Apple computers and iPods are made abroad, predominantly in China. As you might expect, the workers who assemble them see little of the profit.

The first factory we visited was in Longhua, just 20 miles from Hong Kong. Run by Taiwanese company Foxconn, it is the original and largest plant to be built in mainland China. It's a sprawling place where 200,000 people work and sleep – meaning this iPod City's population is bigger than Newcastle's.

Arriving at the gates, the visitor is initially struck by the giant billboards inviting anyone over 16, the legal working age here, to apply for jobs. Workers live in dormitories on the site, 100 to a room, arriving with a few possessions and a bucket to wash their clothes. The accommodation may be free, but it comes at a cost – no one outside the plant is allowed to visit the workers.

Zang Lan, 21, from Zhengzhou in central China, has worked on the Apple assembly line for a month. Her 15-hour days earn her £27 a month – about half the wage weavers earned in Liverpool and Manchester in 1805, allowing for inflation. This is low, even for China, but Zhengzhou is a particularly poor region so workers would accept even less. 'The job here is so-so,' Zang Lan says. 'We have to work too hard and I am always tired. It's like being in the army. They make us stand still for hours. If we move we are punished by being made to stand still for longer. The boys are made to do push-ups.'

Every morning the workers, in beige jackets to denote their junior status, are taken up to the factory roof for a military-style drill. 'We have to work overtime if we are told to and can only go back to the dormitories when our boss gives us permission,' says Zang Lan. 'If they ask for overtime we must do it. After working 15 hours until 11.30pm, we feel so tired.' Foxconn, one of the world's biggest IT companies, is currently investing £31 million in plants in Beijing and Suzhou to take advantage of China's cheap workforce. A fifth of Foxconn's million-strong workforce is deployed here, working on other Apple products, including computers. Only a tiny proportion of workers are allowed to make iPods.

The second iPod plant we visit, in the industrial area of Suzhou on the borders of Shanghai, belongs to the Asustek company. Here workers produce more than two million motherboards and 150,000 laptops a month, as well as the popular iPod Shuffle. The site, as large as eight football pitches, is surrounded by barbed wire. It employs 50,000 workers and its six gates are manned 24 hours a day, seven days a week, with particular attention paid to gate five which leads to factory eight – the home of the iPod Shuffle.

Here the dormitories are outside the plant, and we spoke to some of the workers at the end of their working day. Although the proximity to Shanghai means they are better paid than their Foxconn counterparts, earning up to £54 a month, they have to pay for dormitories and food, which takes up half their salaries. Working up to 12 hours a day, their only freedom is the half-hour walk to and from work. Security is high everywhere, but especially in the five-storey E3 factory which makes the Nanos. Police – not security

guards – are stationed on all gates, studiously checking those entering and leaving the site to thwart rivals intent on industrial espionage.

One 26-year-old security guard, who would not reveal his name, earns £ 80 a month. 'Factory eight is mostly made up of women as they are more honest than men,' he tells us. ' The iPod Shuffle is very easy to steal because it is so small.' The guard is virtually the only person we interviewed in the communist run country who understood the implications of China's cheap labour force. 'Payment is lower because the boss wants to reduce our costs,' he says. 'Prices need to be competitive to get orders from abroad.' Which is exactly why Apple makes its products in China.

The Nano contains 400 parts that together cost an estimated £41. The tiny flash memory card, which stores thousands of songs, is by far the most expensive part at £25. Made in Korea, flash memory, which replays the music without skipping when the user moves, is extremely robust. That was proved when staff on a technology website ran over their iPod in a car. The screen broke, but the music played on.

The amplifier comes from Edinburgh-based Wolfson Microelectronics, whose audio converter translates the digital information into buzz-free analogue sound. This essential component, costing just 85p, makes an 8,500-mile journey to be assembled in China. Batteries cost £2.60 each, and the headphones and the ClickWheel used to select tracks each cost 45p. Labour costs in the Chinese factories we traced are a further £4.20 per iPod. Everything considered, the total cost of manufacturing an iPod Nano is around £41. In Britain they sell for between £109 and £179.

Still, putting together an iPod's hundreds of components is a task of fiendish complexity and mindboggling logistical efficiency. For an idea of the global nature of business, consider just one component, the Nano's central PortalPlayer microchip. The chip's core technology is licensed from British firm ARM, then modified by PortalPlayer's programmers in California, Washington state and Hyderabad, India. The finished chip will carry about one million lines of code. PortalPlayer works with microchip design companies eSilicon and LSI Logic, both based in California's Silicon Valley, who send the finished design to a 'foundry' in Taiwan.

These sites cost up to £1.5 billion to set up, and represent the most complex aspect of chip construction. They produce thousands of 'wafers' – thin metal discs imprinted with hundreds of thousands of chips. These are sent out to be cut up into individual discs, which go on to Taiwan, where each is tested individually. The chips are then encased in plastic and readied for assembly by Silicon-Ware in Taiwan and Korea. The finished microchip is sent to a warehouse in Hong Kong, then transported to the plants in mainland China, where the iPods are put together, before being shipped worldwide.

Will Sturgeon, managing editor of IT website silicon.com, said such global operations are now commonplace. 'Apple are only one of thousands of companies manufacturing their products in the same places and in the same conditions,' he said. 'It's the nature of big business today to exploit any opportunity that comes their way.'

James Kynge, author of China Shakes The World, argues that despite Westerners' perceptions about working conditions in factories, the wages are a godsend that are transforming rural China. 'The money sent back to farming families from the workers now exceeds the amount made from agriculture,' he says. 'Because China has no independent unions, subcontractors like Foxconn are able to keep wages artificially low. Workers will be lucky if they make two per cent of the profit from an iPod. Foxconn will make less than ten per cent. Far more money is spent by Apple on marketing the product than making it.'

China misses out on this lucrative market because its poor global reputation means it has not been able to build its own worldwide brands. 'Even if the Chinese made their own version of the iPod and sold it at a fraction of the price, no one would buy it,' says Kynge. 'Consumers respond to the Apple logo, not the people in Chinese factories making the products.' Apple declined to comment last night.

1 Find the adjectives and adverbs derived from adjectives and enter them in this list according to their connotation (see examples):

positive	neutral	negative
popular		stark

2 List the paths of the main components of the iPod:

component	design / licence	stages of production
PortalPlayer processor	ARM – Britain	programmed in California, ...

5 The Corporation

corporation.mov

In the late 19th century, American courts decided that the business corporation has the same legal rights as a natural person. Since then, it has become a dominant economic, political and social force around the globe. This film takes an in-depth psychological examination of the organisation model through various case studies. What the study illustrates is that in its behaviour, this "person" typically acts like a dangerously destructive psychopath without conscience. Furthermore, we see the profound threat this psychopath has for our world and our future, but we also see what people with courage, intelligence and determination can do to stop it.

Watch the documentary and use the following questions to take notes.

1 *What was the purpose of early corporations?*
What were the restrictions imposed on early corporations?
How did corporations benefit from the 14th Amendment, which was meant to give equal rights to former slaves?

2 *What is the advantage of incorporating a business?*
What kinds of persons are corporations?
Where does the problem for society come in?
What is externalisation?

3 *What harms do corporations do to workers?*
How much does Nike pay a worker to make a shirt?
What percentage of the retail price of a Nike shirt is labour cost?
Do corporations really help improve the local economy?

4 *What harms do corporations do to human health?*
What was the major innovation of the 1940s?
What effects do chemicals produce on human beings?
What is the cancer risk in our times?

5 *What harms do corporations do to nature?*
What effects did BST produce in cows?
What were the consequences of deploying Agent Orange?

6 *What harms do corporations do to the biosphere?*
Who were the major corporate criminals in the 1990s?
Why do corporations not care much about environmental regulations?
Is the analogy of flying and corporations a good one?

7 *What are symptoms of psychopathy?*
Who bears the moral responsibilities for corporate behaviour?
"The institution is monstrous." How does this affect society?
What is one of the worst sources of pollution in the world?

8 *What are the consequences of rich white people running corporations?*
How did the The Ecology of Commerce change Ray Anderson's attitudes?
What were Carlton Brown's first thoughts after the 9/11 attack?

Why did commodity brokers want Saddam to create even more trouble?

9 *What is the major difference between medieval and modern societies?*
Comment on the statement, "wealth is only created when it is created privately."
How does Noam Chomsky describe privatisation?
What can be benefits of public companies?
"One day, everything will be owned by somebody." – What are the arguments for and against this?

10 *Describe the differences between marketing in the 1960s and nowadays.*
What is the key to marketing to children?
Why do corporations target small children?
Why is it beneficial to have mindless consumers who buy goods they do not want?

11 *What do corporations advertise in addition to a specific product?*
Why do corporations use different brands?
Why are non-commercial interpersonal relationships necessary?
Describe the shill methods of undercover marketers.
What is the difference between product placement and shill marketing?

12 *Retell the case of General Electric and Dr. Chakrabarty.*
What were the consequences of the court decision?
What prospects does the future hold for various life forms?

13 *Summarise the Monsanto story investigated by Fox TV reporters.*

14 *How did the privatisation of the water supply affect the lives of people in Cochabamba?*
Why do corporations often collude with oppressive right-wing regimes?
Why would corporations such be interested in buying water supplies in Austria?

15 *Retell the collusion of American corporations with Nazi Germany before and during World War II.*
Is the situation better now?
What role did General Butler play in the 1930s and 1940s?

16 *Why have governments become powerless vis-à-vis corporations?*
Why do many people fervently oppose globalisation?
Why do corporations subscribe to corporate social responsibility?
What were the results of the campaign against sweat shops?
What could the public, lawyers and politicians do against corporations?

17 *What are the challenges in climbing Mount Sustainability?*
What does the future hold for the people?

6 Internationalism vs. globalisation

Internationalism

By its very nature, internationalism is the antithesis to nationalism. Internationalism presupposes the recognition of other nations as equal, in spite of all their differences, and advocates a greater economic and political co-operation among nations for the benefit of all. Partisans of this movement, such as supporters of the World Federalist Movement, claim that nations should cooperate because their long-term mutual interests are of greater value than their individual short-term needs. Internationalists take pride in not only being citizens of their respective countries, but in being citizens of the world. Furthermore, they often support some kind of world government.

Despite its shortcomings, the United Nations is a prime example of an organisation in the internationalist spirit. According to its Charter, the UN aims:

- to save succeeding generations from the scourge of war,
- to reaffirm faith in fundamental human rights,
- to establish conditions under which justice and respect for the obligations arising from treaties and other sources of international law can be maintained, and
- to promote social progress and better standards of life in larger freedom.

In addition to maintaining peace and security, other important objectives are:

- developing friendly relations among countries based on respect for the principles of equal rights and self-determination of peoples;
- achieving worldwide cooperation to solve international economic, social, cultural, and humanitarian problems;
- respecting and promoting human rights, and
- serving as a centre where countries can coordinate their actions and activities toward these various ends.

Globalisation = westernisation (= Americanisation)

According to Peter L. Berger, Austrian-born sociologist at Boston University, globalisation is synonymous with westernisation, and comes in four flavours:

fourfaces.pdf

The Davos Culture – Named after the World Economic Summit that meets in that Swiss luxury resort, this culture is carried by international business. Its participants know how to deal with computers, cellular phones, currency exchange, etc. They also dress alike, exhibit the same amicable informality, relieve tensions by similar attempts at humour, and of course mostly interact in English. Since

these cultural traits are mostly of American provenance, individuals coming from different backgrounds must go through a process of socialisation that will allow them to engage in this behaviour with seemingly effortless spontaneity.

Faculty Club International – Essentially, this is the internationalisation of the Western intelligentsia, its values and ideologies. While the "Davos culture" tries to sell computer systems, the "faculty club culture" promotes a rather different agenda, such as feminism and environmentalism. It is carried by foundations, academic networks, NGOs, and other organisations such as development agencies with social and cultural missions. It too is primarily an elite culture, but it spreads its beliefs and values through the educational system, the legal system, various therapeutic institutions, think tanks, and at least some of the media of mass communication. Faculty Club International internationalises the conflicts in which this intelligentsia has been engaged on its home territories, such as the anti-smoking movement. These conflicts can now be observed worldwide, though always of course subject to local modifications.

The McWorld Culture – It is this culture that is the epitome of Westernisation, and more specifically, of Americanisation. Young people throughout the world dance to Anglo-American music, wiggling their behinds in American jeans and wearing T-shirts with messages in English. Older people watch American sitcoms on TV and go to American movies. Young and old grow taller and fatter on American fast food. This cultural hegemony is – not surprisingly – resented by many, including French ministers of culture and Iranian mullahs. The critics of cultural imperialism also understand that the McWorld culture carries a significant freight of beliefs and values, as exemplified by pop music. Its attraction lies not only in loud, rhythmic sound and athletic dancing, but also in a whole cluster of cultural values: self-expression, released sexuality, and, most importantly, defiance of stodgy local traditions.

Evangelical Protestantism – While the Islamic resurgence is limited to countries which have a Muslim tradition, Evangelical Protestantism has been exploding in parts of the world in which this religious tradition was previously unknown. The most dramatic explosion is occurring in Latin America, as the disappointed poor turn away from the Catholic Church. But it has also been rapidly growing in East Asia, with the notable exception of Japan. Despite repression, it is making its way into the People's Republic of China, and there is incipient growth in Eastern Europe. In its new territories, Evangelical Protestantism is bringing about a cultural revolution because it radically changes the relations between men and women, the upbringing and education of children, and the attitudes toward traditional hierarchies.

- **Explain the differences between internationalism and globalisation.**

- **For societies outside North America, Westernisation harbours a large potential for conflict. Choose one of the four faces of global culture, and find a partner to analyse these questions:**
  What social groups are mainly attracted to this aspect of the global culture? – Why?
  Where are the potential areas of conflicts between global culture and traditional Austrian culture?
  What are the impacts of this aspect of the global culture on cultures in Africa, Asia and Latin America?

7 Persuasive speeches

7.1 Other People's Money

New England Wire and Cable Company is a profitable company overall, but its old core factory producing copper wires and cables is losing money. Yet Andrew Jorgenson, the patriarch of the old family business, insists on keeping the factory running to protect his workers and community. His opponent, corporate raider Larry the Liquidator, tries to convince the stockholders that it is in their best interest to shut down the money-losing factory and to spin off the other assets.

liquidator.mov

Watch Andrew Jorgenson and Larry the Liquidator plead their causes at the annual stockholders' meeting, and make notes.

- **Focus on technique: Andrew Jorgensen**
  What message does he communicate?
  What support does he use?
  How would you describe his his speaking / delivery style?
  What technique(s) does he use to get his message across? Examples?

- **Focus on technique: Lawrence Garfield**
  What message does he communicate?
  What support does he use?
  How would you describe his speaking / delivery style?
  What technique(s) does he use to get his message across? Examples?

- **Comparison:**
  How do the speaking styles compare / contrast?
  Which man's message do you find more convincing, appealing or relevant? Why?

- **Aspects of Persuasive Techniques:**
  Message being delivered
  Tone of voice
  Body Language / Gestures
  Types of words (eg, emotionally laden, facts, statistics)
  Approach (emotional, logical, ethical, treatening, etc.)

Transcript Andrew Jorgenson:

Well, it's good to see so many familiar faces, so many old friends. Some of you I haven't seen in years. Well thank you for coming. Now, Bill Coles, our able President, in the annual report has told you of our year, of what we accomplished, of the need for further improvements, our business goals for next year and the years beyond. I'd like to talk to you about something else. I wanna share with you some of my thoughts concerning the vote that you're gonna make and the company that you own. This proud company, which has survived the death of its founder, numerous recessions, one major depression, and two world wars, is in imminent danger of self-destructing – on this day, in the town of its birth. There is the instrument of our destruction. I want you to look at him in all of his glory, Larry "The Liquidator," the entrepreneur of post-industrial America, playing GOD with other people's money. The Robber Barons of old at least left something tangible in their wake – a coal mine, a railroad, banks. This man leaves nothing. He creates nothing. He builds nothing. He RUNS nothing. And in his wake lies nothing but a blizzard of paper to cover the pain. Oh, if he said, "I know how to run your business better than you," that would be something worth talking about. But he's not saying that. He's saying, "I'm going to kill you because at this particular moment in time, you're worth more dead than alive." Well, maybe that's true, but it is also true that one day this industry will turn. One day when the yen is weaker, the dollar is stronger – or when we finally begin to rebuild our roads, our bridges, the infrastructure of our country – demand will skyrocket. And when those things happen, we will still be here, stronger because of our ordeal, stronger because we have survived. And the price of our stock will make his offer pale by comparison. God save us if we vote to take his paltry few dollars and run. God save this country if that is truly the wave of the future. We will then have become a nation that makes nothing but hamburgers, creates nothing but lawyers, and sells nothing but tax shelters. And if we are at that point in this country, where we kill something because at the moment it's worth more dead than alive – well, take a look around. Look at your neighbor; look at your neighbor. You won't kill him, will you? No. It's called murder and it's illegal. Well, this too is murder – on a mass scale. Only on Wall Street, they call it "maximizing shareholder value" and they call it "legal." And they substitute dollar bills where a conscience should be. Dammit! A business is worth more than the price of its stock. It's the place where we earn our living, where we meet our friends, dream our dreams. It is, in every sense, the very fabric that binds our society together. So let us now, at this meeting, say to every Garfield in the land, "Here, we BUILD things. We don't destroy them. Here, we care about more than the price of our stock! Here, we care about people.

Transcript Larry Garfield:

Amen. And amen. And amen. You have to forgive me. I'm not familiar with the local custom. Where I come from, you always say "Amen" after you hear a prayer. Because that's what you just heard – a prayer. Where I come from, that particular prayer is called "The Prayer for the Dead." You just heard The Prayer for the Dead, my fellow stockholders, and you didn't say, "Amen." This company is dead. I didn't kill it. Don't blame me. It was dead when I got here. It's too late for prayers. For even if the prayers were answered, and a miracle occurred, and the yen did this, and the dollar did that, and the infrastructure did the other thing, we would still be dead. You know why? Fiber optics. New technologies. Obsolescence. We're dead alright. We're just not broke. And you know the surest way to go broke? Keep getting an increasing share of a shrinking market. Down the tubes. Slow but sure. You know, at one time there must've been dozens of companies making buggy whips. And I'll bet the last company around was the one that made the best goddamn buggy whip you ever saw. Now how would you have liked to have been a stockholder in that company? You invested in a business and this business is dead. Let's have the intelligence, let's have the DECENCY to sign the death certificate, collect the insurance, and invest in something with a future. "Ah, but we can't," goes the prayer. "We can't because we have responsibility, a responsibility to our employees, to our community. What will happen to them?" I got two words for that: Who cares? Care about them? Why? They didn't care about you. They sucked you dry. You have no responsibility to them. For the last ten years this company bled your money. Did this community ever say, "We know times are tough. We'll lower taxes, reduce water and sewer." Check it out: You're paying twice what you did ten years ago. And our devoted employees, who have taken no increases for the past three years, are still making twice what they made ten years ago; and our stock, one-sixth of what it was ten years ago. Who cares? I'll tell ya: Me. I'm not your best friend. I'm your ONLY friend. I don't make anything? I'm makin' you money. And lest we forget, that's the only reason any of you became stockholders in the first place. You wanna make money! You don't care if they manufacture wire and cable, fried chicken, or grow tangerines! You wanna make money. I'm the only friend you've got. I'm makin' you money. Take the money. Invest it somewhere else. Maybe, maybe you'll get lucky and it'll be used productively. And if it is, you'll create new jobs and provide a service for the economy and, God forbid, even make a few bucks for yourselves. And if anybody asks, tell 'em ya gave at the plant. And by the way, it pleases me that I am called "Larry the Liquidator." You know why, fellow stockholders? Because at my funeral, you'll leave with a smile on your face AND a few bucks in your pocket. Now that's a funeral worth having!

1 *Which speaker was more convincing?*

2 *Why was the other speaker less effective?*

3 *How do you rate their body language?*

4 *How were their voice levels (too low – too high – just right)?*

5 *Were the speeches clearly structured and did they have a good conclusion?*

6 *Did the speakers have any irritating (distracting) habits?*

7 *Should they do anything differently the next time around?*

8 *Rate both speeches on a 10-point scale.*
(10 being the highest mark, 1 the lowest)

9 *Do you have any other comments?*

7.2 List of topics for short persuasive speeches

Argue FOR or AGAINST one of the following standpoints. Structure your speech carefully, using at least three arguments to support your position. If you have never done this before, see the next pages for useful tips.

1. *Capitalism is better than Socialism or Communism.*
2. *The Austrian government has too much power.*
3. *Too much regulation is bad for business.*
4. *There are too many unnecessary laws.*
5. *Privatisation of health care is an absolute must.*
6. *Education should be under state control at all times.*
7. *Housing for low-income families should be provided by the state.*
8. *Rent control must be abolished.*
9. *Working hours and wages should be negotiated on an individual basis between the employer and the employee.*
10. *Child labour is necessary in some countries.*
11. *The state pension system should be abolished.*
12. *Unemployment benefits must be reduced to an absolute minimum to give unemployed the incentive to find work.*
13. *Health insurance and health care should be privatised.*
14. *Public transport would be more efficient if it were in private hands.*
15. *Minimum wages should be abolished.*
16. *Private security firms ensure better security than the police.*
17. *Privately run penitentiaries save the taxpayer a lot of money.*
18. *Fighter planes are absolutely necessary for Austrian air defence.*
19. *Health and safety regulations are too strict in Austria.*
20. *Farming subsidies must be maintained at the present level.*
21. *The sale of drugs should be legalised in Austria.*
22. *Gun control laws should be loosened in Austria.*
23. *Rising unemployment has nothing to do with government policies.*
24. *The flat-tax system is superior to progressive taxation.*
25. *Private business does not spend enough on research.*
26. *Caring for the homeless is not a government responsibility.*
27. *Environmental legislation should not limit economic progress.*
28. *Federally subsidised housing is a thing of the past.*
29. *Anybody should be free to go into any kind of business.*
30. *College education should be ensured by private institutions.*
31. *Others:*

7.3 Review: Persuasive or argumentative language

The ultimate aim of persuasive or argumentative language is to make your opinion count. Therefore, an effective argument will:

- **have a clear standpoint or position on an issue**
- **consider the needs and interests of the intended audience**
- **give evidence to support (or reinforce) statements**
- **consider (and refute) opposing standpoints**

When preparing a persuasive speech, be sure to follow these guidelines:

1 **Choose an issue and decide which side you want to argue for.**
Even if you are personally undecided on an issue, it is necessary that you choose a position for the sake of the argument!

2 **Decide on the type of argument.**
Use the appeal that is most appropriate for your audience and the topic: pathetic, ethical or logical. See the next pages for examples.

3 **Begin the argument with a thesis statement.**
Clearly state the position you want your reader or listener to accept. This should be the first sentence of your argument!

4 **List and arrange the points you want to make.**
Often, various aspects of an issue can be distinguished: moral, political, economic, etc. It is most effective to present your points in increasing order of importance – strongest points last!

5 **Support your points with various kinds of evidence.**
- Think of your audience: if you use evidence your reader does not understand or if you do not provide enough to convince him, your argument will fail.
- Relevant facts are powerful evidence. Opinions can also be used, but beware of supporting opinions with other opinions.
- The more unusual your standpoint on an issue, the more evidence you will need to support it.

6 **Consider opposing viewpoints.**
Think of views that are different from your own and try to imagine what an opponent might say. If you can show that an opposing viewpoint is wrong, i.e. you can refute it, then you strengthen your own position.

7 **End your argument by restating your thesis statement or position.**

Types of arguments used in persuasive English

An argument is a method or strategy for convincing the reader or listener. There are different methods for achieving this objective. While providing relevant facts to support a point is especially effective (and particularly important in technical or scientific writing), it is not the only way to convince a reader or listener. We distinguish among three kinds of appeal:

1 PATHETIC APPEAL
The writer appeals to the reader's emotions or values, by choosing examples or raising issues that the reader may have strong feelings about.

2 ETHICAL APPEAL
The writer establishes him/herself as an authority and as a fair-minded person by showing that he/she has knowledge of the subject and understanding for the reader's viewpoint.

3 LOGICAL APPEAL
The writer uses factual evidence and logical reasoning to support his viewpoint.

When planning an argument, it is important to consider what kind of appeal is appropriate for the topic and for the intended audience.

Do not use only one kind of appeal – an argument that relies on a combination of these types of appeal is usually best.

Refuting opposing arguments

To refute an argument is to argue against it – this is an effective means of strengthening your own viewpoint. Try to anticipate the arguments a critic of your position might present and argue against both the main points and the reasons that support them. Look at the way the following argument refutes an opposing view and presents a counter argument:

1 Choose an issue and decide which side you want to argue for.
Even if you are personally undecided on an issue, it is necessary that you choose a position for the sake of the argument!

2 Decide on the type of argument.
Use the appeal that is most appropriate for your audience and the topic: pathetic, ethical or logical. See the next pages for examples.

3 Begin the argument with a thesis statement.
Clearly state the position you want your reader or listener to accept. This should be the first sentence of your argument!

4 List and arrange the points you want to make.

Often, various aspects of an issue can be distinguished: moral, political, economic, etc. It is most effective to present your points in increasing order of importance – strongest points last!

5 Support your points with various kinds of evidence.

- Think of your audience: if you use evidence your reader does not understand or if you do not provide enough to convince him, your argument will fail.
- Relevant facts are powerful evidence. Opinions can also be used, but beware of supporting opinions with other opinions.
- The more unusual your standpoint on an issue, the more evidence you will need to support it.

6 Consider opposing viewpoints.

Think of views that are different from your own and try to imagine what an opponent might say. If you can show that an opposing viewpoint is wrong, i.e. you can refute it, then you strengthen your own position.

7 End your argument by restating your thesis statement or position.

Study this example of refuting an opposing view:

1 *The Flat Earth Society claim that the Earth is flat.*
2 *They say that we would all fall off if it were round.*
3 *This is clearly wrong.*
4 *We know that the world is round because if we travel enough in any direction, we will eventually arrive back where we started.*
5 *We do not fall off because we are held by gravity.*

Making a case – beware of logical pitfalls!

The use of logical arguments is a powerful means of convincing your audience of the rightness of your standpoint. However, it is important to recognise faulty logic – poor or incorrect reasoning – so that you do not build your arguments upon an unsound foundation, and so that you are not deceived by the logical traps of others. The following are some common pitfalls:

1 Argument using an accepted authority (*argumentum ad verecundiam*)

This kind of argument inappropriately refers to an accepted authority to convince the audience. The following example uses accepted authorities to support a case in favour of reincarnation:

Even such practical Western thinkers as Benjamin Franklin and Henry Ford shared a belief in reincarnation. And J. P. Getty, the oil billionaire and art collector, was said to have believed himself a reincarnation of the culture-loving Roman emperor Hadrian.

2 Argument based on prejudice (*argumentum ad invidiam*)

This tactic tries to mobilise the audience's negative prejudice to convince them of the rightness of a viewpoint. The following example tries to attack the acceptability of the person who holds a viewpoint in order to discredit that viewpoint:

She's a communist (fascist/feminist…)! How can you believe anything she says!

3 Argument based on concession (*argumentum ex concesso*)

This tactic tries to make the listener admit something which is then used as the basis of the speaker's case. Study this example:

A Do you believe in freedom and democracy?
B Of course I do!
A And the right to free speech and to free assembly?
B That's part of it.
A Then you must believe that the Nazi Party of America has the right to march through Jewish areas shouting anti-Semitic slogans.

4 Argument in which the chain of cause and effect is broken (*non sequitur*) In this type of argument the conclusion reached does not follow logically from the premise. This is a typical example of a non-sequitur:

It is a fact that smokers have lower university grades that non-smokers.
Therefore, if you give up smoking, your grades will improve.

5 Argument that presents a false dilemma

This presents an all-or-nothing choice between two options, although more options actually exist. Study this example:

The U.S. will risk further terrorist attacks if we don't allocate more money to the army and to the intelligence services.

Useful words and expressions

- To reinforce an argument (make it stronger) use words such as *furthermore, besides, moreover, in addition* etc. Example:

Motorcycles are preferable to cars because they use less gasoline.
Furthermore /moreover/besides/in addition, they cause less pollution.

- To refute or disagree with an opposing argument, use reported speech to tell about the opinion of others that you disagree with. Examples:

Some people say that…	*This is clearly wrong.*
Some people claim that…	*This is unlikely to be true.*
Some people believe that…	*They are very mistaken.*
I strongly disagree with this view.	*This view is not acceptable.*

- To make the closing of an argument more emphatic, use phrases such as:

No one can deny that…
There should be no doubt that…
As I have clearly demonstrated…

7.4 Persuasive speech evaluation

Use these items to evaluate your fellow students' persuasive speeches.

1 *Evaluator's name:*

2 *Speaker's name:*

3 *Speaker's topic and thesis sentence:*

4 *Did the speaker convince you?*
Was the speech effective or did it miss its point?

5 *Did the speaker maintain good eye contact with you?*

6 *How was his/her voice level (too low – too high – just right)?*

7 *Was the speech clearly structured and did it have a good conclusion?*

8 *Did the speaker have any irritating (distracting) habits?*

9 *Should he/she do anything differently the next time around?*

10 *Rate the speech on a 10-point scale.*
(10 being the highest mark, 1 the lowest)

11 *Any other comments?*

7.5 Pair activity: Planet Utopia

A new planet has been discovered that is physically and biologically identical to planet Earth. As global warming and other environmental issues have made life on planet Earth very difficult, the Earth government has decided to colonise the new planet.

You have been chosen to head the group of settlers who will travel there and establish a new, 'perfect' society. Your task now is to decide what your vision of this new society will be, and how it will function.

First discuss the different economic theories (economic systems that have shaped the world) and decide what the advantages and disadvantages of each are. Consider the two main questions that economic theory seeks to answer:

- What governs the way in which human labour, machines and land are combined in production?
- How are buyers and sellers brought together in a functioning market?

Also take into account how various systems have worked (or could work). You should consider:

- What role should the State play, and in which area(s) of society?
- What role should private enterprise play, and in which area(s) of society?
- What role should the individual play, and in which area(s) of society?
- Where should money come from and how should it be allocated?

Then devise what you think an ideal (Utopian) society would be. Remember that economic theory takes human nature into account. Be prepared to explain and justify your vision to the class.

You work in pairs. Each presentation is approximately 15 minutes; then you lead a class discussion of approximately 10 minutes (total time = 25 minutes). Prepare questions, issues and/or ideas for the class to discuss.

Innovation and entrepreneurship

Joseph Alois Schumpeter

1 Creative destruction

A member of the Austrian School of Economics, Joseph Alois Schumpeter, created the concept of creative destruction as early as 1942. Although it was long absent from traditional economic textbooks, the powerful economic concept of creative destruction was rediscovered to explain many of the dynamics of industrial change of the 1980s and 1990s.

Schumpeter's book, *Capitalism, Socialism and Democracy*, published in 1942, describes the process of industrial transformation that accompanies radical innovation. In his vision of capitalism, innovative entry by entrepreneurs was the force that sustained long-term economic growth, even as it destroyed the value of established companies that enjoyed some degree of monopoly power:

> The opening up of new markets and the organizational development from the craft shop and factory to such concerns as US Steel illustrate the process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one … [The process] must be seen in its role in the perennial gale of creative destruction; it cannot be understood on the hypothesis that there is a perennial lull.

Successful innovation is normally a source of temporary market power, eroding the profits and position of old firms, yet ultimately succumbing to the pressure of new inventions commercialised by competing entrants. There are numerous types of innovation generating creative destruction in an industry:

- New markets or products
- New equipment
- New sources of labour and raw materials
- New methods of organisation or management
- New methods of inventory management
- New methods of transportation and/or communication
- New methods of advertising and marketing
- New financial instruments
- New ways to lobby politicians or new legal strategies

Creative destruction may also go the other way, pushing an industry to a monopoly situation. Microsoft is a clear example of this, as it is the corporation that has come to dominate PC and server software markets at the expense of older or smaller companies.

However, this is not a problem for those who support the process of creative destruction because if Microsoft does not keep innovating, they risk losing market share to new competitors. The fact that they must sustain innovation in order to prevent competition is seen as a good thing for consumers. Also, in their view, there is nothing to stop competitors such as Apple and Google from pushing innovation, which would erode Microsoft's market share. This is the process of creative destruction.

Unfortunately for some, creative destruction hurts. Layoffs of workers with obsolete working skills sometimes signal these new innovations. Though they allow more workers to be available for more creative, and productive uses, they can cause severe hardship in the short term.

2 Innovation models

The Western world worships innovation as an absolute corporate good, along with such things as teamwork and leadership. Even more than these virtues, innovation has come to be seen as synonymous with growth. Political economists have assigned tremendous significance to it as the process of "industrial mutation" keeps markets healthy and progressive. Management theorists recently embraced the notion, and the new slogan is innovate or die.
Basically, we distinguish three innovation models:

1 The integrator model

A company assumes responsibility for the entire innovation process from start to finish, including the design, manufacture, and sale of a new technology. In general, large, well-heeled companies such as Intel do best with this model.

2 The orchestrator approach

Functions such as design are kept in-house, while others, including manufacturing or marketing, are handed off to a strategic partner. This model works best when speed is of the essence, or if a company wants to limit its investment. When Porsche couldn't meet demand for its popular Boxster sports coupe in 1997, for example, it turned to Finnish manufacturer Valmet – rather than open another costly plant.

3 The licensor approach

A software company may license a new operating system to a series of PC manufacturers to ensure that its product gets the widest distribution at the lowest possible investment cost. That's Microsoft.

Adapted from: http://www.fastcompany.com/magazine/78/jobs.html

3 Innovation in the automotive industry

3.1 The Tucker 1947–1948

Background

Preston Thomas Tucker, an automotive engineer who helped to design racing cars before World War II, almost realised his ambition of producing a "completely new" passenger automobile after World War II. In 1947, he and his business associates leased a former aircraft plant in Chicago from the War Assets Commission. Fifty-one nearly identical Tucker automobiles, which were designed by Tucker, Alex Tremulis and J. Gordon Lippincott, were built before the Tucker Corporation was forced to go out of business.

The Tucker automobile had many innovative features, from its fastback shape to its swiveling center headlight and independent four-wheel suspension. Furthermore, it offered enhanced passenger safety features such as a pop-out windshield, padded dashboard, and a place where the front-seat passenger could crouch in the event of a collision.

The Tucker never entered full production, but its design epitomised automotive trends that were new and significant in the immediate post-war years: avant-garde styling, innovative mechanical features, interest in passenger safety, and efforts by small manufacturers to capture a larger share of the new-car market. The Tucker was an exaggeration of these trends and evidence that the desire for change was strong enough to move some fairly radical ideas from the drawing board to the production stage.

tucker_promo.mov

Political interference

Tucker's radically new car design was not welcomed by the Big Three – GM, Ford and Chrysler – because they would have had to invest millions to keep up with the new competitor. Instead of innovating themselves, they turned to politics for help. Tucker's supply lines were cut, and soon found himself embroiled in fraud allegations. Read Preston Tucker's open letter that appeared in many newspapers in the United States on 15 June 1948.

Gentlemen:

As you know, we are building a completely new motorcar—the rear engine Tucker. Being new-comers in the field we have had to start from scratch and work harder and faster than most of you. For example, instead of the 20 months you usually take to produce a new model of conventional design, my engineers have taken less than 10 to perfect a car which I firmly believe opens a new era in motoring.

In this same year, we have completed a nationwide dealer organization, acquired the largest most modern automotive plant in the world, and cleared the decks for mass production. These things have been done—and well done—in spite of persistent and unfair opposition from within the automobile industry.

Please don't misunderstand me. Many of you have gone out of your way to be friendly to the Tucker Corporation. It's true, some of you have not shared our conviction that a rear-engine car is the car of the future, but you have been willing to let the American motorist judge that for himself, in the firm belief that what's best for the motorist is best for you in the long run.

But there is another group—a very powerful group—which for two years has carried on a carefully organized campaign to prevent the motoring public from ever getting their hands on the wheel of a Tucker. These people have tried to introduce spies into our plant. They have endeavored to bribe and corrupt loyal Tucker employees. Such curiosity about what goes on in the Tucker plant should be highly flattering, I suppose. But they haven't stopped there.

They even have their spokesmen in high places in Washington. As a direct result of their influence, Tucker dealers all over the country—men of character and standing in their communities—have been harassed and grilled by agents of the government and Congressional Investigating Committees.

My associates and myself and the Tucker Corporation have been investigated and investigated, time and again. Millions of dollars of the taxpayers' money have been squandered in an utterly fruitless effort to kill the Tucker, to bar us from needed raw materials, to keep us so busy defending ourselves and our efforts that the motoring public would tire of waiting for a completely new rear-engine car. But they haven't been able to stop us.

You know, perhaps, that our bid on a government-owned steel plant in Cleveland was recently refused. Let me tell you the inside story of that. Sealed bids were called for, in accordance with law. Only two were submitted, one by the steel company operating the plant, the other by the Tucker Corporation. The bids were opened nearly five months ago. The Tucker Corporation's bid was high. If Tucker's bid had been accepted, it could have given taxpayers as much as four million dollars more for the plant than the steel company offered.

This plant would provide ample raw materials for volume production of the Tucker and would serve numerous small businesses now starving for steel.

You would think our high bid for the plant would have been accepted long ago. For five months political pressure, ruthless and barefaced, has forced delay after delay. We're still waiting. We don't know who is responsible for this. But who do you suppose is getting the raw material from this plant we want for Tucker and small business? None other than some well known—and unfriendly—automotive manufacturers.

Most of the political pressure and investigations we have had to face these last two years can be traced back to one influential individual who is out to "get Tucker." If he acts from honest conviction in his efforts to prolong the motorcar, then I hope he will have the courage to tell the public just that.

But personally we believe he has more obvious motives. Evidence in Tucker files, for example shows the controlling interest in a large sales agency of an automotive corporate subsidiary is in his wife's name. And when he gave an elaborate party at a Washington hotel a few months ago, who do you suppose paid the bill? None other than an official of an automobile manufacturer—a manufacturer distinctly unfriendly to the Tucker Corporation. Is all this, too, just coincidence?

Now once more we are being investigated. Just at the time we are getting into production on a car that has won the hearts of the million motorists who have seen it, just when the job of making automobiles demands all our time and energy, my associates and I are asked to take time out again and again ever since we had the temerity to suggest America is eager for a completely new car.

What would you think in our place? Would you say it was just coincidence—or would you think it was planned that way?

You wonder, perhaps, why I have made these statements in an open letter. Here's why: As President of Tucker Corporation, I'm responsible to 1,872 Tucker dealers and distributors and nearly 50,000 Tucker stockholders. These people have put $25,000,000 into the Tucker Corporation. And I am going to protect their interests.

In addition, we have promised American motorists a completely new rear-engine motorcar, and hundreds of thousands have written us that they are ready and waiting to buy it. Every day letters come to us from people who know that in fighting to put the rear-engine Tucker on the road we are, at the same time, fighting for their right as motorists to get the finest engineering American ingenuity can produce.

We are going to justify the support these motorists so generously have given us. We are going to give them the car they want at a price they can afford, and without paying tribute to the Black Market. How this will be done will be announced today.

But in the meantime, I want to register the fact that we have just begun to fight. We have been patient so far, but our patience is wearing thin. We can give names, dates and places to prove our charges of unfair competition, and if necessary we will do it.

When the day comes that anyone can bend our country's laws and lawmakers to serve selfish, competitive ends, that day democratic government dies. And we're just optimistic enough to believe that once the facts are on the table, American public opinion will walk in with a big stick.

Source: <http://www.hfmgv.org/exhibits/showroom/1948/letter.html>

Film: Tucker – The Man and His Dream

tucker.mov

After viewing the film, you should be prepared to:

- **Characterise these individuals:**
  - *a Preston Tucker*
  - *b Abe Karatz*
  - *c Senator Homer Ferguson*
  - *d Tucker's crew*
  - *e Bennington, President of the Board*

- **Answer these questions:**
  - *a Preston Tucker has a vision, but what other qualities does he have that make him an entrepreneur?*
  - *b How does Tucker set up the government representatives at lunch?*
  - *c What is his main selling point during this presentation?*
  - *d What did the seat belt imply to a car buying public at that time?*
  - *e How does Tucker motivate and encourage the people who work for him? Give an example.*
  - *f Why did Tucker need a Board of Directors? What was the board's role in the development process?*
  - *g What is – according to Tucker – the key to the free enterprise system?*
  - *h What caused Tucker's downfall?*
  - *i What does Tucker mean when he says, "It's the idea that counts, Abe, and the dream."*

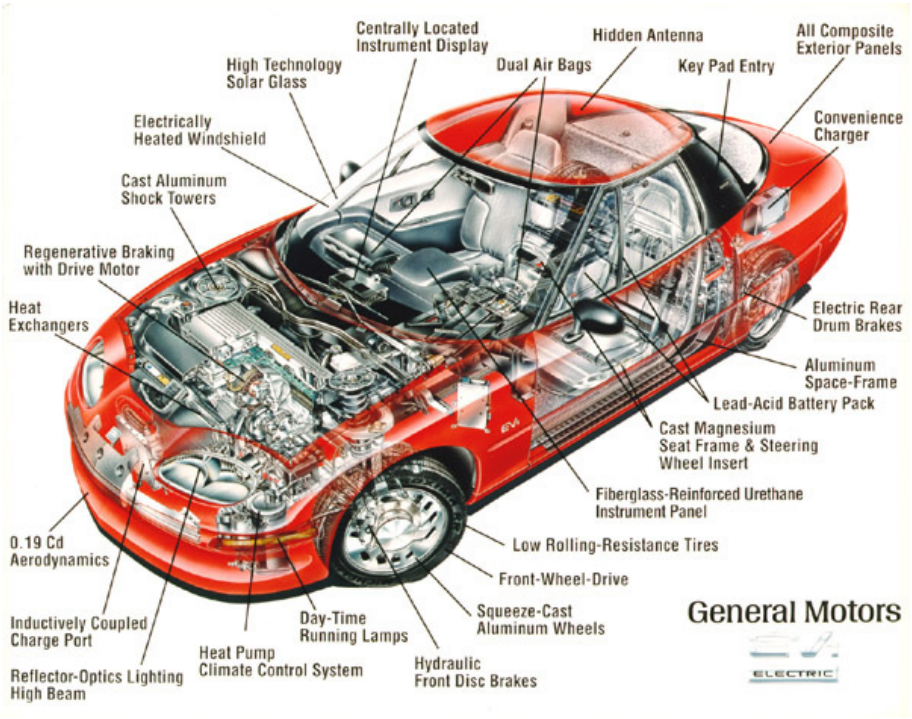
- **Examine the American Dream:**
  - *a What was the American dream in the late 1800s and early 1900s?*
  - *b What does the film say about the American Dream?*
  - *c Why are the Big Three interested in thwarting Tucker's plans?*
  - *d How does the film depict the involvement of politics?*

- **Examine these concepts:**
  - *a innovation*
  - *b competition*
  - *c free market system*
  - *d monopoly*

- **Do further background research on the characters and the product.**
  A Google search yields about 7,000 hits for "Preston Tucker."

3.2 History repeats itself: Who killed the electric car?

electriccar.mov



In 1990, California launched a zero-emissions vehicle programme to clean up the state's smoggy skies. Under the programme, two per cent of all new cars sold had to be electric by 1998, and 10 per cent by 2003.

In 1996, General Motors launched the EV1, its first modern-day commercially available electric car. The car required no fuel and could be plugged in for re-charging at home and at a number of so-called battery parks.

Many of the people who leased the car, including a number of celebrities, said the car drove like a dream. One of its owners, actress Alexandra Paul, said, "The EV1 was a high performer. It could do a U-turn on a dime; it was incredibly quiet and smooth. And it was fast. I could beat any Porsche off the line at a stoplight. I loved it."

But it was not to be. A little over 1,000 EV1s were produced by G.M. before the company pulled the plug on the project in 2002 due to insufficient demand. Other major car makers also ceased production of their electric vehicles.

In the wake of a legal challenge from G.M. and DaimlerChrysler, California amended its regulations and abandoned its goals. Shortly thereafter, automakers began reclaiming and dismantling their electric cars.

Some suggest that G.M. – which says it invested about $1 billion in the EV1 – never really wanted the cars to take off. They say G.M. intentionally sabotaged their own marketing efforts because they feared the car would cannibalise its existing business. G.M. disputes these claims.

4 Pioneers of the PC industry

4.1 Xerox and PARC

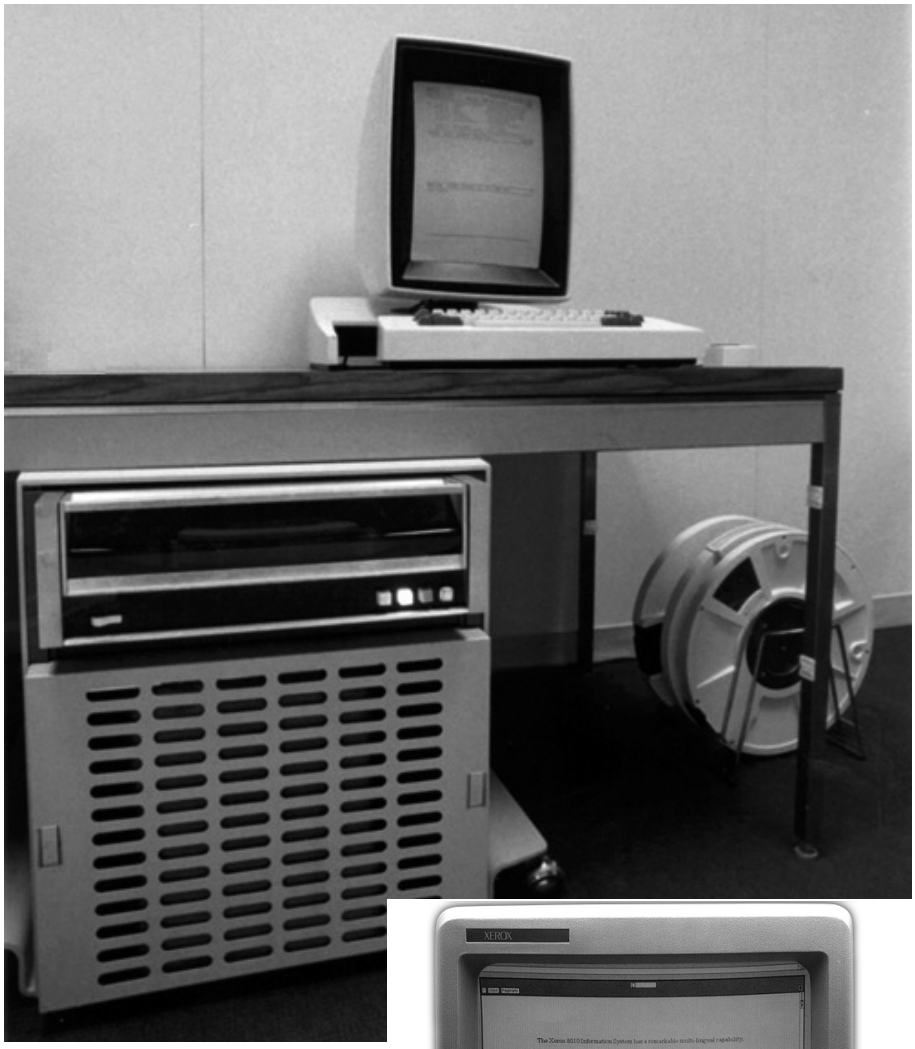
Xerox had invented and dominated the paper copier market since 1948, but with the accession of C. Peter McColough as president in 1966 the company began to explore options for diversifying its business.

In 1969 the director of research, Jack Goldman, produced a plan to establish an "Advanced Scientific & Systems Laboratory" to develop future technologies. The laboratory was not intended to reproduce the already existing Xerox research laboratory in Rochester, New York, that worked on refining and expanding the company's copier business. Instead, it was to be a site for pioneering work in advanced physics, materials science, and computer science applications. The new laboratory was built in Palo Alto, near Stanford University. Stanford had demonstrated a commitment to cooperative ventures with electronics firms since before World War II, and later with the computer industry, in order to develop the region surrounding the university – a region now known as Silicon Valley.

Upon opening the facility in Palo Alto, director George Pake went about assembling a staff. His first hire was Robert Taylor, a former deputy director of the Advanced Research Projects Agency (ARPA), which had established a government-sponsored network of research data bases that played a key role in creating the Internet. At ARPA Taylor had been at the centre of a network of people engaged in advanced research; choosing from his vast array of contacts, he was able to staff PARC with visionary researchers. Commercial products might not appear for a decade, but prize-winning ideas would develop quickly, and Xerox would be the first to profit. Or such was the plan. As events transpired, the 1970s were a decade of fundamental innovation at PARC, but its parent company failed to transform these ideas into dollars.

Among the many inventions of the 1970s, few are as important as the personal computer, and, because the Xerox Alto was developed in 1973, PARC can claim credit for having made the first one. However, the mindset at Xerox, like that of all computer manufacturers of that time, was that a market did not exist for such machines. Corporate analysts asserted that the computer would be too expensive to market to the private and small-business users it was designed to serve, and so the machine was never released. By the time its commercial successor, the Xerox Star, was released in 1981, at over $16,000 per machine, it was too late.

parc.mov



Xerox Alto

Xerox Star

http://www.digibarn.com/friends/curbow/star

Not only had new computer companies – such as Apple, Commodore and Tandy – already released more affordable machines, but even the giant IBM had released a relatively inexpensive personal computer, the IBM PC. The Star, however, with its mouse-driven graphical user interface (GUI), built-in Ethernet networking protocol, and optional laser printer, was far ahead of its time. Discouraged by poor sales – fewer than 2,000 units were sold – Xerox backed out of the personal computer market. It remained for other companies to cash in on Xerox's innovations – which soon became easier with the availability of cheaper computer memory, a critical cost component of early GUI-based computers.

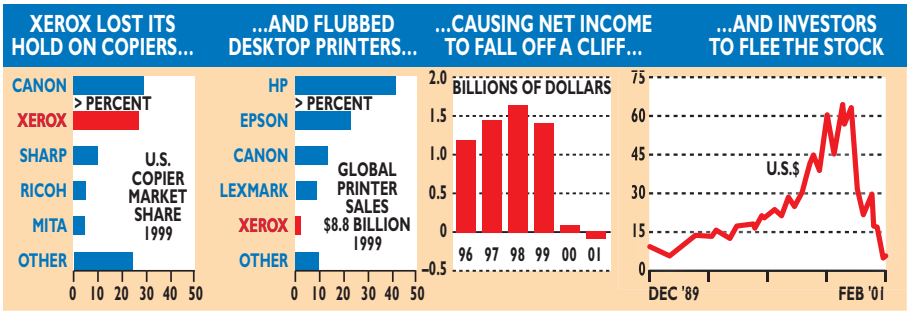
Part of the problem for PARC was distance. Located far from the corporate seat of power in Stamford, the researchers at PARC were not part of everyday Xerox life. The story of the laser printer, a technology developed by PARC's Gary Starkweather, epitomises the poor communication between the research laboratory and corporate headquarters that resulted in Xerox's inability to capitalise on PARC innovations. Starkweather, a researcher at Xerox in the mid-1960s, had an idea to use lasers in Xerox's copiers. Starkweather realised that short exposures, on the order of a billionth of a second, from a laser could replace the copier's traditional light source. More important, a laser-driven copier could also serve as a printer, taking an image from a computer screen and capturing it on paper. No longer would computer printers be restricted to producing text and approximating images with standard typographic characters.

Instead, anything displayable on a computer monitor could be printed. The idea of "what you see is what you get" (WYSIWYG) would work on paper as well as the monitor. Unfortunately, at that time Xerox saw no point in innovating when their current technology worked so well. Only intervention by Goldman saved the idea when he had Starkweather transferred to PARC in 1971. By early 1972 a working prototype existed – but Xerox did not bring it to market until 1977. The laser printer soon became a best-selling product.

Another early PARC breakthrough was Ethernet. Proposed by Robert Metcalfe and jointly developed with Intel and DEC in the mid-1970s, this networking standard increased the speed and reliability of data exchanges over local area networks (LANs). Ethernet is still commonly used in small offices and in homes to link computers and printers.

Alan Kay, another researcher brought to PARC by Taylor, was among the first people to envision developing small "notebook" computers. Kay created a computer programming language for it called Smalltalk. Although the technology was not yet available to produce his "Dynabook," Smalltalk was instrumental in creating the graphical user interface for the Alto. Smalltalk was the first true object-oriented computer programming language, and it remains popular with PC programmers.

Xerox, the company that invented the copier and dominated the industry until the 1990s, has seen its profits fall and its dominance vanish as Japanese competitors launched less expensive and improved designs. Their own low costs allowed them to charge lower prices to customers, thereby drawing customers away from Xerox, which had become complacent and inefficient. In 2000, the former giant was on the brink of bankruptcy, having lost its lead even in copiers, its core business:



Xerox has sold off underperforming units and cut more than 15,000 jobs since 2000, after falling into the red and facing questions over its accounting practices. Nevertheless, Xerox still faces challenges in selling its office products, against increasingly tough competition from main rivals Ricoh and Canon. The performance of Xerox (XRX) has been lackluster in recent years, closing at $15.60 on 28 June 2008:

http://finance.yahoo.com

4.2 Apple: The Mac conundrum

Due to Xerox's failure to capitalise on its inventions, the personal computer industry only began when Apple Computer introduced the Apple II in 1977. Ever since, Apple has been the spearhead of the industry, delivering an impressive list of innovative features. Apple was first in introducing many of the features that computer users have since come to take for granted, including the graphical user interface, the mouse, the laser printer, and the colour monitor.

Almost everyone agrees that Apple's products are not only trailblazers but also easier to use, often more powerful, and always more elegant than those of its rivals. Yet those rivals have followed its creative leads and snatched the profits. Today, Apple commands less than 5 per cent of the worldwide market for PCs. Consider that in the last 10 years alone, Apple has been issued 1,300 patents, almost one-and-a-half times as many as Dell and half as many as Microsoft – which both dwarf Apple in terms of revenue.

All of this raises an important question: If Apple is the brains of the industry, if its products are so much better than Microsoft's or Dell's or Hewlett-Packard's, then why is the company so small?

Conventional wisdom has long answered that Apple is the victim of a single, huge strategic error: the decision in the 1980s not to license its operating system. But that was long ago and far away. Apple has since had many opportunities to reverse its infamous decision, but it hasn't done so.

Steve Jobs may have unwittingly put his finger on what's wrong during a keynote speech in Paris. "Innovate," he bellowed from the stage. "That's what we do." He is right – and that may be the trouble. For most of its existence, Apple has devoted itself single-mindedly, religiously, to innovation.

The ambition to build the "perfect machine" used to drive Apple to design everything, from hardware to software, in-house regardless of cost. It is the inevitable choice for Apple's culture, which demands something akin to absolute artistic control. This pursuit of perfection also led Apple to opt for a closed operating system. A closed computing environment is easier to control than an open one. Applications can be written to integrate with one another seamlessly, making the system less buggy. Hence, a better user experience.

Today, the company has 400,000 independent and in-house developers writing programs and making products for MacOS X, and its number is growing again. In comparison, however, more than 7 million developers build applications for the Windows platform worldwide. Fewer developers mean fewer new products to run on Apple machines. That means fewer options for end users, which influences purchasing decisions, and therefore sales and profits.

Adapted from: <http://www.fastcompany.com/magazine/78/jobs.html>

Apple's quest to put us at ease with technology


Sir Jonathan Ive, CBE

Ask designers which companies excel at design, and they'll probably say Apple. But if you ask Jonathan Ive, Apple's senior vice president of industrial design, how Apple does it, he seems almost apologetic. "It sounds unremarkable and even naïve, but it's our obsession with making really great products," he said. "It's at the heart of everything we do. I don't understand how you can exist as a company and not have it."

Ive moved to California to join Apple in 1992. "The anticipation was that I was joining the company that had produced the Mac," he recalled. "But it was very different." By then, Apple had lost the innovative spirit instilled by its co-founders Steve Jobs and Steve Wozniak. The turning point was Jobs's return in 1997. He and Ive worked together on the iMac's launch the following year, and forged a relationship that has been central to Apple's success.

"It's shocking for a CEO to say publicly, as Steve has, that the goal of a company isn't to make money, it's to make great products," Ive said. "We've been a long way through product development programs and canceled them because we had that sinking feeling that they weren't good enough. That courage testifies that the product is at the heart of everything we do."

The reality of designing for Apple is a daily battle with the laws of physics to make the products lighter, sleeker, smaller etc. A shameless design geek, Ive spends hours discussing new materials and technologies with designer friends. He works with crack designers at Apple and they have extraordinarily sophisticated resources, but one of the things Ive loves most about his job – that almost everything he designs is new – is also his greatest challenge.

Apple's products are not only new in terms of what they do, but how they are constructed. The company develops new tools, materials and production systems for each project in an arduous process of checks and cross-checks. Ive is lucky in that advances in technology have accelerated throughout his career. Having already had new polymers and composite materials to play with, and pioneered the transition from cathode ray tubes to flat panel displays in desktops, he is now excited by the possibility of replacing hard drives with smaller, more robust flash memory in iPods. "When everything is new, it's a huge amount of work because you have to validate the most rudimentary assumptions," he said. "Otherwise you can go a long way down the development path only to find that the product doesn't work."

Equally challenging is ensuring that people feel comfortable using Apple's products, not least because they are the first generation of objects whose function bears no relation to their appearance. If you look at a chair or CD player, you know roughly what it does. Whereas an iPod and MacBook are literally digital boxes of tricks: sleek, compact and enigmatic. "When you have no idea how something works, it's very easy to feel intimidated," Ive said. "A fundamental attribute of a designer is to notice how people connect with objects. When we were working on the iMac in 1997, people still didn't feel comfortable with computers. They'd touch a mouse thinking they might break it." That was one reason why Apple cheered up the original iMac with color, and added a handle to encourage people to touch it.

Our growing confidence in handling technology has since been reflected in Apple's designs. Aesthetically it has graduated from the colors of the late 1990s, to glacial silver in the early 2000s and, recently, to the glossy black of the MacBook. Ive insists that how the products' look is determined by technology and usability, and that Apple's underlying design principles are unchanged. "A huge amount of what we try to do is simplification, solving very complex problems without making the complexity evident," he said. "In so many products you see the designer wagging his or her tail in your face. Our obsession is being very, very pure and inevitable, in some cases getting design out of the way."

Herald Tribune – 26 November 2006

4.3 The PC competition

In virtually any industry, business-model innovators rather than technical innovators have reaped the greatest rewards – Amazon, eBay, and JetBlue. Each company either delivered goods and services differently or more cheaply. In the PC industry, Dell has done both. Unlike Apple, Dell has not done anything to make PCs more attractive or easier to use.

All of Dell's contributions have been in providing other companies' technical innovations to a wider audience at lower cost. In some cases, innovation that we might think of as technical is actually business-model based. Henry Ford, for example, did not invent the automobile – but he did develop the production process that drove costs down and enabled him to pay his assembly workers enough that they could afford cars of their own. A company can be tremendous at innovation on the technical side, but if they cannot wrap that innovation into a compelling value proposition, with a dynamic distribution strategy and attractive price points, then the innovation is not worth much at all.

And it turns out that such value-driven business-model innovation is precisely the sort of thing that Apple was lousy at. In 1989, when the company still commanded a healthy 10 per cent of the global PC market, some internal developers worried that the company couldn't stay competitive without expanding its customer base. And that meant bringing down the cost of the Mac. A group launched a project to design a lower-cost Mac for schools.

The team found ways to take costs out of the Mac, such as cheapening the floppy drive and using a less expensive, smaller power supply. In the end, they produced a fully functional Mac that could have retailed for $1,000 – far less than the standard Mac. But when the team presented the Mac LC (for low cost), the marketing department turned it down. "They said it wasn't Mac-like enough, that the machine felt cheap," says Owen Rubin, a former member of the team. One sticking point was the floppy drive, which did not eject disks the way the original Mac did. Rubin and his team were sent back to the drawing board. The Mac LC hit the market in 1990, at $2,400.

There is one last essential element to successful innovation that was often missing at Apple: follow-through. Innovation is not the key to economic growth. Management is the key to economic growth. In practice, that means supporting product innovation with such things as a solid sales force, a strategy for collaborating with developers and makers of complementary products, and a strategy for customer service.

In many ways, execution is more important. Apple was innovative, but Dell executed.

Adapted from: <http://www.fastcompany.com/magazine/78/jobs.html>

Michael Dell – from chips to riches

In 1984, 19-year-old Michael Dell founded a company with $1,000 and the idea to sell computers directly to customers, cutting much of the existing reseller channels from the process.

The Dell strategy turned the much overlooked cost of distribution into a major business advantage. That idea had the same revolutionary effect on the computer industry as no-frills flights had on the aviation business. The same direct-selling concept has been copied by other companies, mostly less successfully than what Dell has been able to achieve.

The first Dell computer design was revealed in 1985: the *Turbo*, featuring an Intel 8088 processor running at 8MHz. As signs of early focus on customer service, Dell introduces next-day, on-site product service in 1987. The early success was followed by investor interest in the company, which culminated in the initial public offering of company stock in 1988: 3.5 million shares at $8.50 each.

Dell history took a major turn in 1989 as it entered mobile computing with the first laptop design. The company expanded rapidly, entering the top 5 global computer manufacturers in 1993. The same year, Dell started the expansion into Asia-Pacific markets, with subsidiaries in Australia and Japan, and three years later, it opened an original Asia Pacific manufacturing center in Penang, Malaysia.

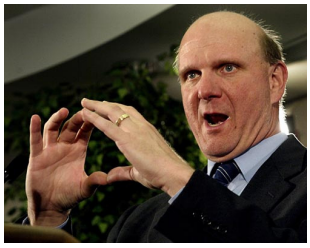
In 1996, its stock was added to the Standard & Poor's 500 stock index. The same year, Dell.com was launched, and online business soon became a major channel for direct sales for the company, with daily sales reaching $50 million by 2000. In 1997, Dell also began to push into the network-server market with the launch of its first workstation systems.

In 1997, per-share value of common stock reached $1,000 on a presplit basis. To date, the stock has been split seven times, making one original stock @ $8.50 the equivalent of 96 stocks @ $53.40 each at its peak in spring 2000. This means that each dollar invested in 1988 returned $600 in 2000 – giving investors an annual interest rate close to 5,000 percent!

In the wake of the stock market crash in 2000, Dell stock lost almost two thirds of its value. Nevertheless, Dell climbed to the top global position in computer shipments in 2001, and two years later it started expanding into other computer-related equipment areas as well as consumer electronics. In late June 2008, Dell Inc stock traded at 22 dollars.

Sources: <http://www.computers-guide.com/dell-computer-history.html>
<http://www1.us.dell.com/>
<http://finance.yahoo.com/>

Is Microsoft innovative?



Concerning the DoJ vs MS trial, Steve Ballmer, Microsoft chief executive, said that the pace of innovation in the computer industry would be slowed if the proposed break-up went ahead. But the history of the PC shows that very few innovations originated within Microsoft. All the software giant has done is roll them into its operating systems and drive their popularity – often to the detriment of the companies that did invent them.

Microsoft has rolled together technologies from many different sources to bolster the position of Windows. Here are but a few examples:

- The mouse was first invented by Douglas Engelbart at the Stanford Research Institute in the late 1960s. He took the device with him when he moved to the Xerox Palo Alto Research Centre.
- Apple Founder Steve Jobs saw it when he took a tour of the lab in the 1979 and used it for the Lisa computer.
- The Graphical User Interface, which Microsoft later turned into Windows, was also first developed at Xerox PARC.
- Bill Gates and Paul Allen, the founders of Microsoft, got started by adapting the BASIC computer language for the Altair 8800.
- Gates and Allen bought the software that would later become the DOS operating system from Seattle Computer Products.
- Even this software was based on the CP/M operating system developed by Gary Kildall working at a company called Digital Research.
- Microsoft had a long running legal dispute with Stac Electronics over technology that effectively increases the capacity of a computers' hard disk. Stac alleged that Microsoft tried to take its technology without giving sufficient compensation and a US court agreed. Microsoft was forced to pay $120 million in damages.
- The first popular spreadsheet was called VisiCalc and was written by Dan Bricklin of Software Arts in 1979.
- Mitch Kapor of Lotus then created a version for the IBM PC which was only later eclipsed by Microsoft's Excel.
- The Toolbars that float around the edges of programs were invented for a program called MacPaint in 1984. They only turned up in Microsoft Office in 1991.
- Even Microsoft's Internet Explorer browser was heavily based on the one developed by Spyglass software. In 1994 Microsoft signed a deal with Spyglass which at that time had the second most popular internet browser program. Now few people have even heard of Spyglass.

Source <http://news.bbc.co.uk/1/hi/business/781765.stm>

Bill Gates: PC Genius, Internet Fool

The following article was published in TIME Magazine on 30 June 2008, the eve of Bill Gates's retirement from Microsoft.

Bill Gates, who for years was the richest man in the world, is also one of the smartest. But even he couldn't figure out how to beat the Internet – how to transition his grand old monopoly software company, Microsoft, into a business that thrives on the Net. And so he begins his retirement today from Microsoft as the PC era's biggest winner, and the Web era's most spectacular casualty.

It's pretty well known by now that the Internet, for all its world-flattening glory, is a destroyer of businesses without parallel. How many companies roared along for decades, minting money, only to see the Internet eat their business plans? We live in a media age and the media industry is Exhibit 1 in the murder trial. Newspapers, magazines, music, television, movies – all of the traditional models are dead or dying as bloodied moguls everywhere scramble to survive. But the Net has brutalized old-line business across most industries – retail, telecom, financial services and the technology industry itself, is, ironically, no exception.

Few companies not born on the Web have figured out how to thrive there. (Apple, with its post-PC iPhone could be the shining exception.) As Gates turns his attention full time to philanthropy, I wonder what will be left of the great company he founded, Microsoft, by the time Gates picks up a Nobel Prize for Peace. Clearly, a business with $26 billion in cash reserves isn't exactly at death's door. And Microsoft continues to be enormously profitable, thanks to its operating system monopoly. Thanks, that is, to Gates's genius.

But big, complicated operating systems such as Microsoft's latest, Vista, aren't necessary in the Web Age, where applications are delivered for free and on demand — often without users even being aware of it. The Net is where the money is, and it's the one place that Gates – like so many others – hasn't left his mark.

He saw the Internet missile coming of course. But by the time he sounded the alarm, it may have been too late. (Read his famous "Internet Tidal Wave" memo, sent to the troops May 26, 1995, over a year after the browser company known as Netscape launched.)

http://www.justice.gov/atr/cases/exhibits/20.pdf

Gates was always more accustomed to being a disruptor than being disrupted. At the age of 25, he licensed a primitive operating system, PC-DOS, to IBM for $80,000 rather than sell it outright, a move that's usually ranked as one of the Greatest Business Moves of All Time. Gates figured that many PC makers would copy IBM's open architecture, and make their own PCs; they'd need to license an operating system, too. PC-DOS soon became MS-DOS, an operating system for all IBM clones, and Microsoft was on its way to becoming the one thing that billions of PCs around the world would have in common.

From 1980 until 1994, when Mosaic/Netscape emerged, Gates played a scratch game, parlaying his little "Micro-Soft" company into an empire that defined the PC era. By opening up Windows to third-party developers, he created a platform that made many developers rich, and built out an eco-system that put a desktop in almost every home.

But there is no greater blinder than success, even for a visionary like Bill Gates. By the time he realized the tech world was quickly shifting from PCs to the Network that connected them, his moves were limited. A fiercely competitive man, he reached for the obvious lever, and attempted to tie the late-starter Internet Explorer browser to the monopoly he created, the Windows operating system. The move was mercilessly effective and beat back rival Netscape, which immediately saw its commanding share of the browser market disappear.

Gates built or bought all manner of things to conquer the Net, but few managed to be anything more than also-rans in the innovation game. In 1995, he launched a gated online service, MSN; a Web-based email client, Hotmail was purchased in 1997; a search engine, MSN Search, launched in 1998 using a third-party product as its core; a chat client, Messenger was released in 1999; and last year it bought an online advertising

platform, aQuantive and became a significant, though minority investor, in social network Facebook.

While Microsoft is exponentially larger than Google – number 44 on the Fortune 500 list versus Google at 150 – Google's web business (advertising mostly) is growing so fast, it's poised to rival Redmond's operating system revenues by 2010. And that's the problem. As more and more of what Windows does moves up into the cloud – into Google's always-on, give-'em-whatever-they-want-for-free servers – what becomes of the company that Gates built?

The smartest move Gates could make right now is to get out of the way. (Steve Ballmer should, too; pursuing Yahoo is a pretty good hint that his master plan for the Web is, like Gates's was, to try to buy Microsoft's way into the game.) There are many smart and talented people inside Microsoft who know what to do. (Blow up Vista and abandon its next iteration, Windows 7, and start from scratch, is but one excellent idea.

That will probably work. And if not? Maybe we'll see Gates return, a Nobel in his pocket, ready to wrestle with the Web once again.

The end of an era

On 8 December 2004 IBM, pioneer of the personal computer business, sold its PC division to Lenovo, China's number one computer maker. The $1.75bn deal made the combined operation the third biggest PC vendor in the world.

The sale gives IBM $650m in cash, along with an 18.9% stake in Lenovo worth $600m, and the Chinese firm will also take on about $500m in debt. Lenovo's PC business headquarters will relocate from Beijing to upstate New York, where IBM is based. About 10,000 IBM staff will move to the new enterprise – about 2,300 in design, marketing and sales in the US and the rest in manufacturing in China. Among them is IBM senior vice president Stephen Ward, who will become the firm's chief executive.

The merged firm will have sales of about $12bn a year, as well as a five-year licence for IBM's PC brands. "This acquisition will allow Chinese industry to make significant inroads on its path to globalisation," said Liu Chuanzhi, Lenovo's chairman. One Lenovo official said the deal was a dream come true and a matter of national pride. But the company's position is that it will not be satisfied with its number three position globally.

Back in 1981 the IBM PC hit the market: the first "personal computer" aimed squarely at businesses which – till then – had seen computers as massive central machines to be tapped into where necessary. The PC, in contrast, was designed to put processing power on the desktop.

But copycat vendors moved in to sell their own "IBM-compatible" PCs, and the real money in the industry moved to software vendors – and in particular to Microsoft, the upstart company which had persuaded IBM to use its product to control the PC. IBM failed to spot that hardware would become simply a commodity – a problem which has also hit other once-dominant vendors such as Hewlett-Packard.

IBM has learnt from its experience of repeatedly getting burnt by Microsoft. In a way, the company has returned to its roots, selling the "big iron" which powers corporate networks.

Today, it is much more focused on business services, chipmaking and selling high-powered servers and storage systems, and a significant proportion of its efforts now go into systems running Linux, the open-source competitor to Microsoft's Windows.

BBC NEWS <http://news.bbc.co.uk/go/pr/fr/-/2/hi/business/4077579.stm>

IBM PC Model 5150

4.77 MHz Intel 8088

16 KB of RAM

expandable to 256 KB

MS-DOS 1.0

Hewlett Packard to exit computing

On 18 August 2011 Hewlett Packard announced plans to sell its personal systems group, which includes the world's biggest PC-making business, and that it will discontinue its webOS devices, together with the development of the webOS operating system used in its tablet computers and smartphones.

The announcements mark a significant U-turn for the company, which announced in a March strategic review that it would integrate webOS into all of its future hardware. HP had launched its Pre smartphone as a competitor to the iPhone and devices based on Google's Android operating system. However, WebOS failed to gain traction with reviewers, operators and retailers.

The decision to ditch the Pre, as well as its TouchPad tablet computers, comes despite paying $1.2bn (£727m) last year to buy up the technology through its acquisition of Palm. There have been long-running rumours that chief executive Leo Apotheker, who recently joined from German rival SAP, wanted to refocus the company away from its traditional hardware business towards its smaller, but much more profitable, software lines.

The transformation planned by Mr Apotheker mirrors that of IBM, which dropped out of its traditional hardware business over the past decade. "HP is recognising what the world has recognised, which is hardware in terms of consumers is not a huge growth business anymore," said Michael Yoshikami, chief executive of YCMNET Advisors. "It's not where the money is. It's in keeping with the new CEO's perspective that they want to be more in services and more business-oriented."

On the sale of its PC business, HP said it "will consider a broad range of options that may include, among others, a full or partial separation... from HP through a spin-off or other transaction".

Source: http://www.bbc.co.uk/news/business-14584428

Shaping the computer industry for thirty years

On 30 May 2007, Microsoft Chairman Bill Gates and Apple CEO Steve Jobs met face to face at the D5 conference near San Diego. The interview was conducted by Kara Swisher and Walt Mossberg, technology columnists for the Wall Street Journal.

steve&bill.mov

Watch the interview and write a 200-word summary of the points you find most interesting.

Steve Jobs' resignation: Where now for Apple?

It was hardly a surprise. We have known for a long time that Steve Jobs was ill and rumours of his impending departure have repeatedly rocked Apple's share price over the last couple of years. But the news that he was bringing down the curtain on his illustrious career was still greeted with shock.

After all this is the man who transformed the business he co-founded from an ailing also-ran into the undisputed champion of the technology industry – so it is natural to ask what Apple will be without Steve Jobs.

First of all, it is important to recognise that the company has hardly been treading water in the six months since its CEO went on medical leave. Just look at the share price. It started the year hovering just above $300 and in recent weeks climbed briefly above $400, making Apple the world's most valuable company.

We have also seen outstanding financial results and the successful launch of the iPad 2, which still has no substantial rivals in the new category of tablet computers. Remember, all this has happened under the leadership of Tim Cook, Apple's chief operating officer, who stepped into Steve Jobs' shoes for the second time back in January.

Now he has got the job on a permanent basis, and the buzz in Silicon Valley is that he is the right man at the right time. He has apparently been the absolute master of the supply chain – what sounds like a dull part of the Apple operation but is vital to the firm's success.

Tim Cook's career at Apple has been all about making sure that the process of manufacturing cutting-edge products and delivering them to consumers is done efficiently. He is widely credited with delivering the outstanding margins on products like the iPhone and iPad which have in turn delivered the profits which make the business so wealthy.

It's not so clear that the new boss has his predecessor's instincts when it comes to

how products should look and feel. But don't forget that the British design guru Jony Ive, who has masterminded the genesis of every new product since the iMac, is still on board. Together the two men could make a formidable team.

In the autumn, we can expect the launch of the iPhone 5, promising to extend Apple's dominance of the mobile phone industry, in terms of profits if not market share. Then another iPad will be coming along, probably early next year. So in the short term, do not expect the Apple ship to founder.

But something will be missing. Steve Jobs will not be there to unveil those new products - and "just one more thing" - in front of an adoring crowd of devotees. At the launch of the iPad 2, he said this about his company's philosophy:

"It's in Apple's DNA that technology alone is not enough. It's technology married with the liberal arts, married with the humanities that yields the results that make our hearts sing."

Somehow, you cannot imagine those words coming from Tim Cook. And will the new leader be quite as bold in taking Apple into uncharted territory, quite as confident that he knows what consumers want better than they do?

No man is irreplaceable, and Apple is packed with brilliant engineers, designers and managers. The question now is whether it can continue to "think different" without the man who made that into a personal and professional credo.

Source: http://www.bbc.co.uk/news/technology-14664226

5 The Internet and the World Wide Web

The Internet and the World Wide Web are not one and the same:

- The Internet is a collection of interconnected computer networks, linked by copper wires, fiber-optic cables, wireless connections, etc.
- The Web is a collection of interconnected documents and other resources, linked by hyperlinks and URLs.

5.1 History of the Internet

After the USSR had launched its first Sputnik satellite in October 1957, the United States struggled to regain technological leadership in the Cold War. One of the steps was the creation of the Advanced Research Projects Agency in February 1958. ARPA in turn established the Information Processing Technology Office (IPTO) headed by J. C. R. Licklider, a researcher at Harvard and MIT.

One of the missions of IPTO was research in universal networking technology based on packet switching to make networks highly robust and survivable in the event of a nuclear war. More than ten years later, on 29 October 1969, the first two nodes of the ARPANET – the precursor of the modern Internet – were connected between UCLA and SRI International in Menlo Park, California.

During the following decade, the British Post Office, Telenet, DATAPAC and TRANSPAC joined forces to create the first international packet-switched network service, which became known as the International Packet Stream Service (IPSS). By 1981, the networks covered Europe, North America, Hong Kong and Australia. The underlying X.25 packet switching standard had been developed in the mid-1970s, independent of the TCP/IP protocols created in the United States during the same time period.

The term *Internet* for a global TCP/IP network was first used in 1974. However, it took another eight years for the first TCP/IP wide-area network to go live: on 1 January 1983, all ARPANET hosts were switched to TCP/IP. In 1985, the National Science Foundation funded the construction of a 56 kbps university network based on TCP/IP protocols, and the following year, it sponsored the development of a second, 1.5 Mbps backbone that became the NSFNet.

In mid-1989 the NSFNET to the commercial MCI Mail system, which heralded the opening of the network to commercial interests. Other commercial services such as Telemail and Compuserve followed, and three commercial Internet Service Providers were set up in the same year. In the first half of the 1990s, many proprietary networks merged or interconnected with the growing Internet, as the TCP/IP protocol could be deployed on virtually any pre-existing network. This sudden growth was facilitated by the implementation of TCP/IP stacks on UNIX operating systems, together with the availability of commercial routers and Ethernet equipment for local-area networking.

Getting the net off the ground

Robert Kahn, the net's co-inventor tells BBC Click Online how it all began, when, as an assistant professor of electrical engineering at MIT, he took a leave of absence to brush up on his networking theory.

The work that we did was principally on designing what a network would look like. It was me working alone writing memos on the subject. I thought, at that time, that this was about as much practical experience as one would really need, to be a good theoretician back in the university. But it turned out that an agency of the US government, the Defence Advance Research Projects Agency, known as DARPA (it was known as Arpa back then) actually had plans to build a computer network in the country.

At the time, many people didn't think this was a very practical thing to do because it clearly didn't look like a business opportunity and there weren't that many computers around. But I thought it was an interesting technical challenge, so I was actually the system designer of the Arpanet – the very first computer network.

When I got to Darpa, I got involved in the creation of two more nets. One was using satellites, a kind of Ethernet in the sky, on Intelsat-4, and the other one was a kind of a mobile network where the nodes were packet radios that broadcast to each other, so all the nodes could be in motion, in principle, or they could stay fixed as well. The whole goal of that effort seemed pretty straight forward at the time: given that you've got the nets, put them together and get the machines on them to work together. That was the genesis of the project itself.

How to 'internet'?

When I first started the programme I was talking about what we were trying to achieve, which was netting these different computers and networks, so I called the project "internetting".

For computer communications, computers talk in little bursts. They're not continuous like speech. So setting up circuits when you're only going to use it for a little bit of time would be about as inefficient as reserving a road from New York to Los Angeles to drive your car, and letting nobody else on that road.

So the idea that you could share it with little bundles of information that were separately addressed was an interesting challenge. We had a few simple goals. We had to find a notion of what we called a gateway – today they're known as routers – that would handle IP routing through the net.

[It was] an end-to-end protocol which we called TCP that also had to understand IP kinds of communication that would deal with end-to-end problems, putting information back in order, doing error checking, getting re-transmissions when things didn't arrive, getting rid of duplicates, getting things back in order when they arrived out of order and so forth.

I think we succeeded in those very significantly. In terms of dangers, such as viruses, fraud or identity theft, I don't think we were thinking about that at all when we got started. If we had been worried about that, the net might have been better today but we might not have even got there.

Certainly people have asked why we didn't build security in from day one. We weren't worried about viruses because we were dealing with a very narrow research community that was "colleagular". They were all friends and colleagues, and many of those systems had no protections on them whatsoever.

It was only many years later when the net became really a public utility of sorts that those things started to show up. We were not really thinking about the dangers of that and perhaps we should have done. I wish we had spent more time on that, but again, in the context of what we were doing, we might not have actually got the project off the ground.

Robert E. Kahn
Dr Kahn never expected to be become part of technology legend

History of the World Wide Web

Hypertext, the technology that has made possible the World Wide Web, was invented in the 1960s by Ted Nelson and Douglas Engelbart. Over the following two decades a number of hypertext systems were launched, but failed to attract a large number of users. In 1987, HyperCard popularised hypertext and new media. In the late 1980s, Tim Berners-Lee, then a scientist at CERN, started developing a system to ease information sharing among scientists all over the world. In August 1990, he posted this executive summary on Usenet:

Sir Tim Berners-Lee

> The WWW project merges the techniques of information retrieval and hypertext to make an easy but powerful global information system. The project started with the philosophy that much academic information should be freely available to anyone. It aims to allow information sharing within internationally dispersed teams, and the dissemination of information by support groups.
>
> **Reader view**
>
> The WWW world consists of documents, and links. Indexes are special documents which, rather than being read, may be searched. The result of such a search is another ("virtual") document containing links to the documents found. A simple protocol ("HTTP") is used to allow a browser program to request a keyword search by a remote information server.
>
> The web contains documents in many formats. Those documents which are hypertext, (real or virtual) contain links to other documents, or places within documents. All documents, whether real, virtual or indexes, look similar to the reader and are contained within the same addressing scheme.
>
> To follow a link, a reader clicks with a mouse (or types in a number if he or she has no mouse). To search and index, a reader gives keywords (or other search criteria). These are the only operations necessary to access the entire world of data.
>
> **Information provider view**
>
> The WWW browsers can access many existing data systems via existing protocols (FTP, NNTP) or via HTTP and a gateway. In this way, the critical mass of data is quickly exceeded, and the increasing use of the system by readers and information suppliers encourage each other.
>
> Making a web is as simple as writing a few SGML files which point to your existing data. Making it public involves running the FTP or HTTP daemon, and making at least one link into your web from another. In fact, any file available by anonymous FTP can be immediately linked into a web. The very small start-up effort is designed to allow small contributions. At the other end of the scale, large information providers may provide an HTTP server with full text or keyword indexing.
>
> The WWW model gets over the frustrating incompatibilities of data format between suppliers and reader by allowing negotiation of format between a smart browser and a smart server. This should provide a basis for extension into multimedia, and allow those who share application standards to make full use of them across the web.
>
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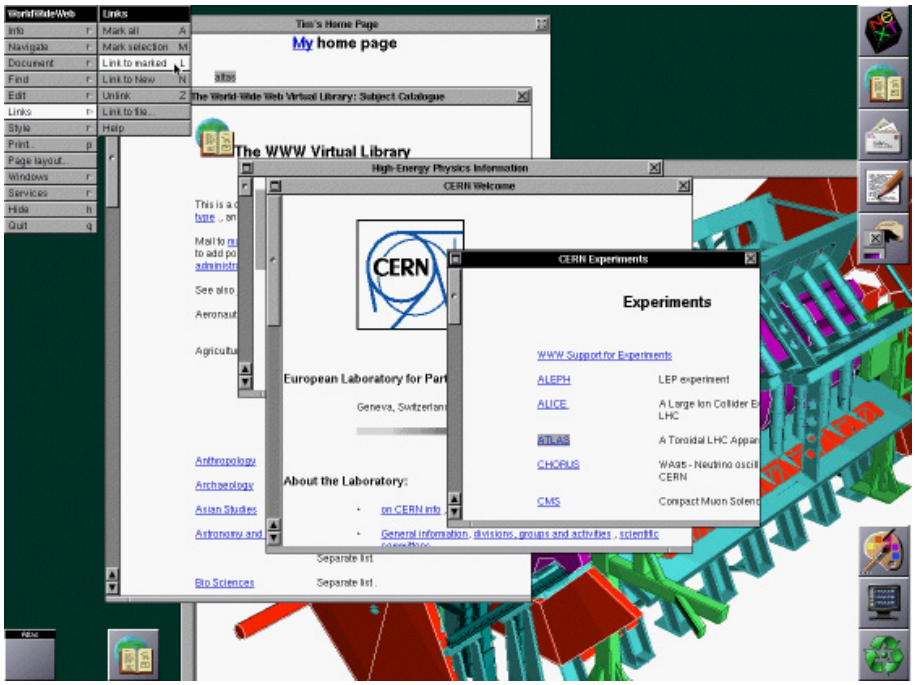
>
> This summary does not describe the many exciting possibilities opened up by the WWW project, such as efficient document caching. the reduction of redundant out-of-date copies, and the use of knowledge daemons. There is more information in the online project documentation, including some background on hypertext and many technical notes.

The NeXTcube used by Tim Berners-Lee at CERN became the first Web server.

From March 1989 on Berners-Lee began implementing "a large hypertext database with typed links" on a newly acquired NeXT workstation. By the end of 1990, he had built *WorldWideWeb*, a Web browser and editor, *info.cern.ch*, a Web server, and the first Web pages. The browser could also access Usenet newsgroups and FTP files, but ran only on the NeXT cube:



WorldWideWeb was later renamed *Nexus* to avoid confusion with the World Wide Web. It was the first program to use the Hypertext Transfer Protocol, invented by Berners-Lee in 1989. At the time it was written, *WorldWideWeb* was the only way to view the Web.

5.2 Early web browsers

ViolaWWW

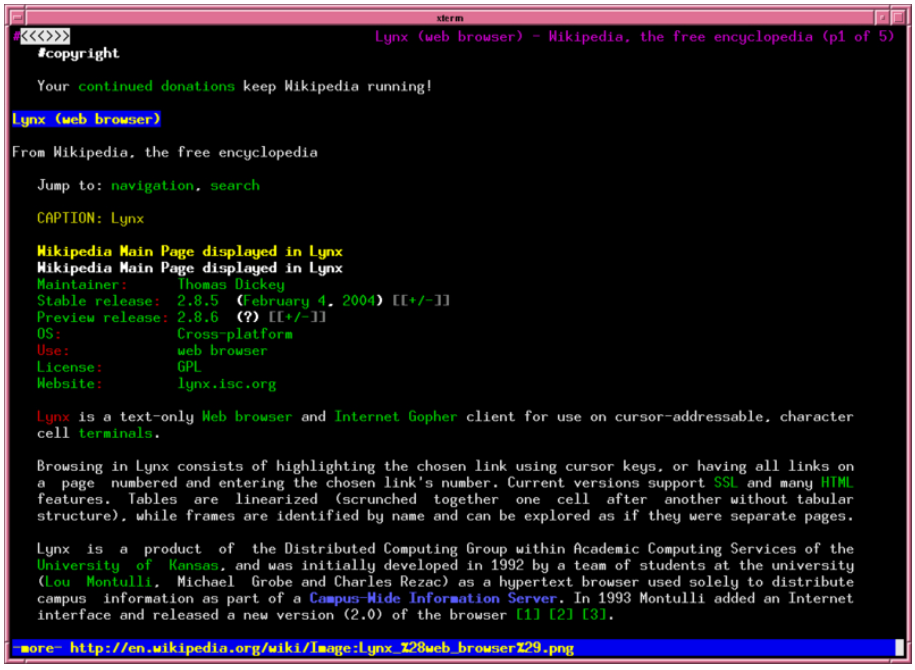
Inspired by HyperCard, Berkeley student Pei-Yuan Wei set out to create the first graphical browser for X Window, a UNIX-based system that had TCP/IP built in. Released in 1991, Viola 0.8 was the first browser to use authoring technology such as embedded scriptable objects, stylesheets, and tables.

As it developed, it adopted more features from HyperCard, such as a bookmark facility, backward and forward buttons, a browsing history feature, tables and graphics. The Viola toolkit facilitated development and support of interactive media, with a multimedia web browser being a possible application.

It was ahead of its time because it was the first web browser to feature a simple stylesheet mechanism as well as a scripting language that can be accessed from an HTML document, such that an HTML document can embed highly interactive scripts and applets, and a sidebar panel used for displaying meta-information and navigational links.

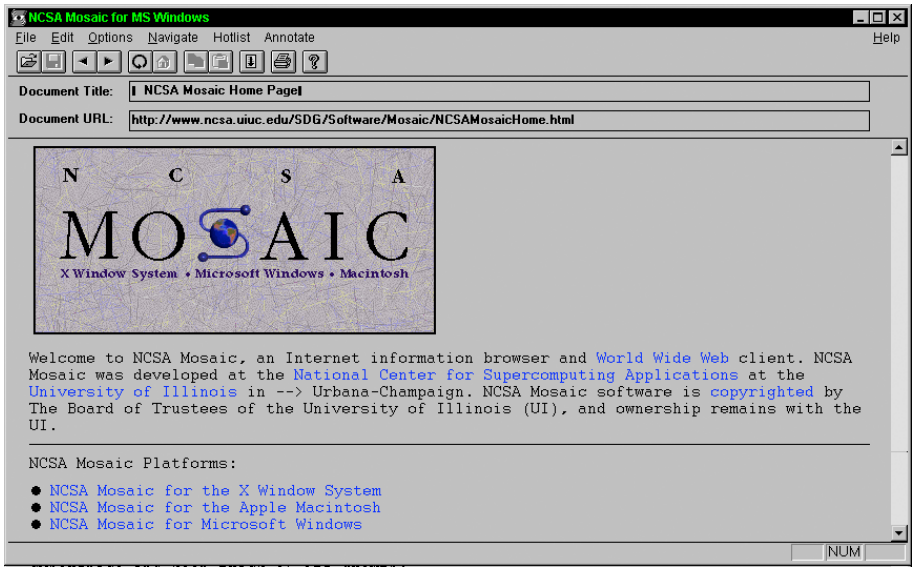
Lynx

Lynx was initially developed by a team of students at the University of Kansas as a hypertext browser for X Window systems, used to access the Campus-Wide Server. Version 2 added an Internet interface, and its DOS and Mac ports helped spawn a large number of web sites. However, it was text-based, with no ability to display and link graphics.



Mosaic

Early in 1993, the National Center for Supercomputing Applications (NCSA) released *Mosaic 1.0* for X Window Systems. As it could display and link graphics as well as text, it quickly superseded Lynx. The release of PC and Macintosh versions of Mosaic saw the number of servers on the World Wide Web explode from 500 in 1993 to over 10,000 in 1994.



Netscape Navigator

Marc Andreessen, co-developer of Mosaic at the NCSA in Illinois, moved to California in 1993. There, Andreessen met the founder of Silicon Graphics, Jim Clark, who believed in the commercial potential of a web browser. With Clark's funds, they founded Netscape Communications to develop Netscape Navigator. Released in December 1994 for Macintosh and Windows, version 1.0 was free for non-commercial use and displayed webpages on-the-fly, where text and graphics appeared on the screen as the web page downloaded. The Netscape browser soon became the de facto standard, as Internet service providers and computer magazine publishers helped make Navigator readily available.

Version 2.0 included important – albeit controversial – features such as cookies, frames, and JavaScript. Critics accused Netscape of bypassing standards to marginalise its competition, and consumer rights advocates were wary of cookies and their potential to invade privacy. Despite these concerns, Navigator was the leader among web browsers with more than 50 per cent market share.

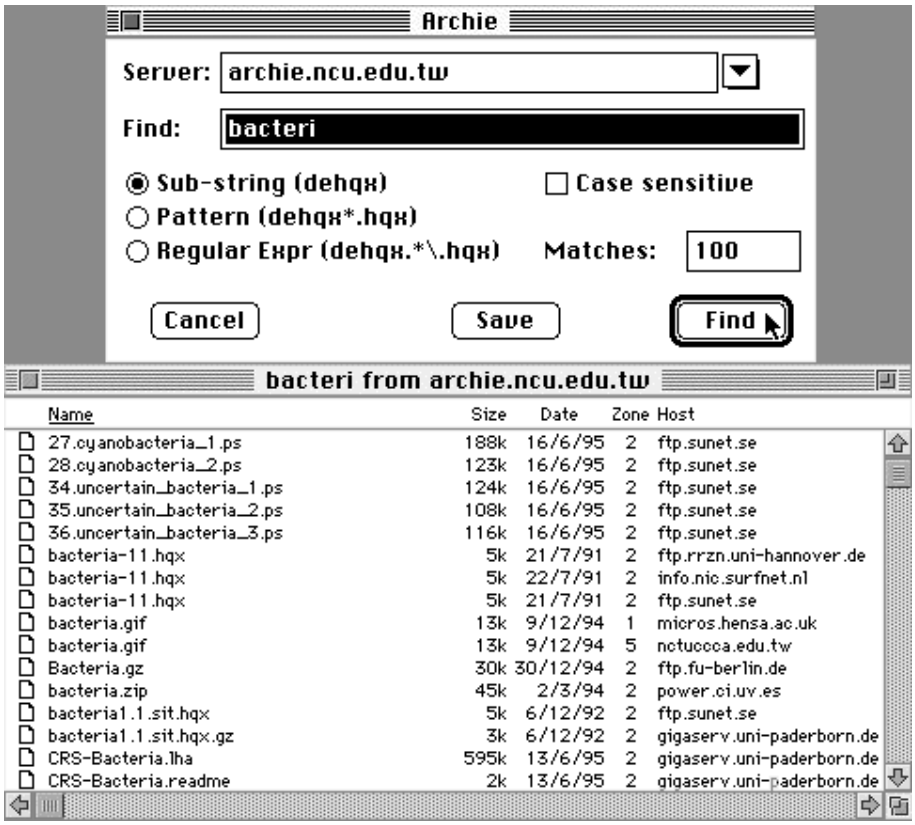
One of Netscape's stated goals was to "level the playing field" among operating systems by providing a consistent web browsing experience across them. Indeed, it looked and worked nearly identically on Windows (3.1, 95, 98, NT), Macintosh, Linux, OS/2, and many versions of UNIX. Microsoft saw this policy as a direct threat to its Windows operating system, and allegedly proposed dividing the market. This division would have allowed Microsoft to produce a web browser for Windows, while leaving all other operating systems to Netscape.

5.3 Early search engines

Before there were search engines there was a complete list of all webservers. The list was edited by Tim Berners-Lee and hosted on the CERN webserver. One historical snapshot from 1992 remains. As more and more webservers went online, the central list could not keep up. On the NCSA Site new servers were announced under "What's New!", but no complete listing existed any more.

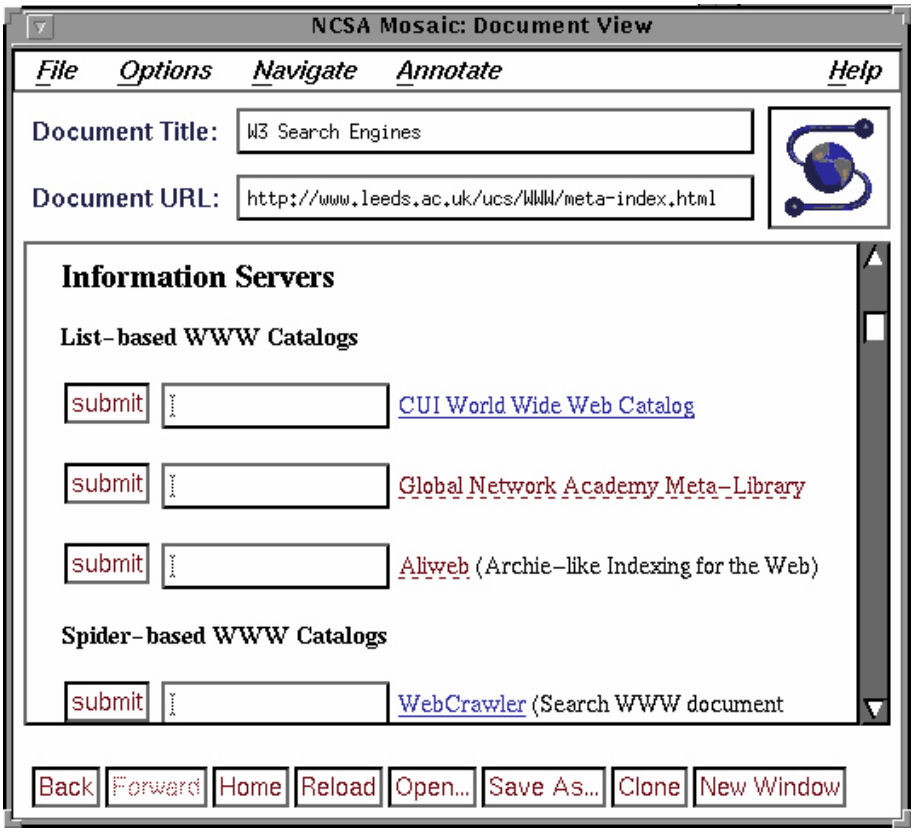
Archie

Archie, the first Internet search engine, was developed in 1990 at McGill University in Montreal. In its original versions, Archie requested listings of remote FTP archives roughly once a month, and these listings were stored in local files which could be searched using the Unix grep command. As more efficient front- and back-ends became available, Archie turned into a popular service accessible from multiple sites around the Internet. Archie servers could be accessed either through a local client, or telnet sessions, e-mail queries, and via WWW interfaces. However, Archie did not index the contents of these sites.



Gopher

Created in 1991 at the University of Minnesota, the Gopher index systems could be searched by Archie or other search programs, such as Veronica and Jughead. Veronica provided a keyword search of most Gopher menu titles in the entire Gopher listings. Jughead was a tool for obtaining menu information from specific Gopher servers. While the name of the search engine Archie (Archive without a V) was not a reference to the Archie comic book series, Veronica and Jughead are characters in the series.



Crawlers

The first Web search engine was Wandex, an index collected by the World Wide Web Wanderer, a web crawler created at MIT in 1993. Initially, search was limited to the title of web pages only. The first-full text crawler-based search engines came out in 1994, with WebCrawler being the first one to be widely known by the public. Unlike its predecessors, it let users search for any word in any webpage, which became the standard for all major search engines since.

Commercial web search engines

Originally a Carnegie Mellon University project, Lycos was launched in 1994, and became the first major commercial endeavour. Soon after, many more search engines entered the fray. The most popular, *Yahoo!*, relied on its web directory rather than full-text copies of web pages.

Search engines were also among the brightest stars in the Internet investing frenzy of the late 1990s. One dollar invested in *Yahoo!* in March 1996 yielded $73.20 at the end of 1999.

Google

Google is the only multi-billion-dollar company in the world that is also a spelling mistake. Back in the palaeolithic era (that's the palaeolithic era in the internet sense, i.e. autumn 1997) its co-founders, Larry Page and Sergey Brin, were graduate computer science students at Stanford. They were working on an insanely cool new search engine, wanted to incorporate it as a company, and needed to find a name. David Vise, in his breezy book *The Google Story*, tells how they came up with one. A fellow graduate student suggested to Page and Brin that they use the name given to what is sometimes, erroneously or metaphorically, called the largest number, 10^{100}: *google*. They looked up the name on the internet, found that it wasn't taken, and registered their brand-new brand, google.com.

The next morning they found that the reason the name hadn't been taken was because it should be spelled googol – and that googol.com had, of course, already been bagged. (It belonged, to a Silicon Valley software engineer and home-brewed beer enthusiast called Tim Beauchamp: 'The links on this page are a mishmash of eclectic destinations that may be of interest to you. Actually, they may only be of interest to Tim but what the heck. It is his site!') Lesser men might have considered that a bad omen, but Larry and Sergey are not bad-omen kind of guys. Just over eight years later, Google is the fastest-growing company in the history of the world – with, at the time of writing, a market capitalisation of $138 billion. Larry and Sergey, the Wallace and Gromit of the information age, are worth more than $10 billion each.

Companies are a bit like people in that they tend to bear the imprint of the milieu in which they were formed. Google, spelling mistake and all, is a product of the intensely academic environment in which both Page and Brin were raised. Page was born in Michigan, Brin in Russia, but apart from that their backgrounds were eerily alike: ethnically but not religiously Jewish, educated in Montessori schools, their fathers both university professors of science (computer science at Michigan and maths at Maryland, respectively), their mothers both also super-numerate (database consultancy and NASA – it must be fun to say 'my mum works at NASA'). Brin was 16 when he began taking classes at the University of Maryland, and 19 when he graduated. He went to Stanford to begin work on his PhD. Page, who had done his first degree at the University of Michigan, came there a year later to have a look at the computer science PhD programme. On a Stanford orientation day in 1995, looking round San Francisco, Page began arguing with the tour guide, a second-year comp. sci. PhD student whose opinionated obnoxiousness so closely resembled his own. You have seen enough buddy movies to know what happened next.

The key idea which underlies Google came out of this academic milieu; it was an insight that could occur only to someone thoroughly marinated in academic ways of thinking. John Battelle, an internet-world insider and search-engine specialist, gives a fascinating account of it in his indispensable book *The Search*. Page was fooling around at Stanford, trying to come up with an idea for his PhD thesis. He had always been interested in Nikola Tesla, a scientist whose list of brilliant inventions – 'wireless communication and X-rays to solar cells and the modern power grid' – was not matched by the success he had in marketing them, or himself. Page liked the idea of making things that caught on; he had no interest in hiding his light under a bushel. He began to think

about his own web page, and who was reading it, and whether or not anyone was not just reading it but linking to it – which would definitely be an indication of a more than casual interest. But while it was easy to find the outward links from a web page, it was not at all straightforward to find out the reverse, who was linking to that site. So Page wrote a program which solved the problem of finding out who was linking to any given web page. He called the program BackRub.

Once BackRub had been written, Page began to wonder if there was a way of using it to determine the utility of any particular site – and this is when he, or he and Brin, had a big idea. It was based on one of the most widely mocked areas in academia, that of bibliometrics: assessing the importance of any given article or piece of information by measuring how often other people in the field mention it. In bibliometrics, no attempt is made to see how sensible or useful or well-argued a piece of work is: all you do is count how often it is mentioned. This never-mind-the-quality-feel-the-width approach sounds like a ridiculous way of assessing the importance of intellectual work but it is, I am told, a surprisingly powerful tool. In any case, it is what gave Page and Brin the idea for a program which measured the importance of a web page by counting how often other web pages linked to it. Page gave the mathematical algorithm which worked out this problem the name PageRank.

Then the boys set out to build a search engine which used PageRank. (The patent for PageRank, incidentally, is owned by Stanford University. Google have exclusive use of it until 2011.) The idea was that a search engine which knew how important a page was would have a powerful advantage in assessing the quality of the information on that page. The search engine would not only be able to look for specific words, it would have a way of assessing the quality of data on the page where those words occur. That would give it a huge advantage in delivering useful information.

As for how it works in practice, the first thing to realise is that Google does not search the internet. If it did, the internet would grind to a halt under the strain of all the searching taking place, because Google alone (let alone the competition) makes upwards of 100 million searches every day. Instead the program searches a copy of the internet stored on its own computers. It sends out a 'crawler' which downloads copies of internet pages. A full circuit of all the web pages in the world takes roughly a month, which is why the information on Google is often a few days old; the most recent snapshot of the

page copied back to the Googleplex is available as the 'Cached' link on any given Google result. (This delay is one of several reasons why, if you can't find anything on Google, it is worth trying an alternative search engine, such as Yahoo or Clusty.) Having copied the internet, it then indexes it. Google makes an index of every word on a web page, where it stands in relation to other words, whether or not a word is listed in a title, whether it is listed in a special typeface, how frequently it is listed on the page and so on. It also gives a lot of importance to the PageRank of the page in question. There are more than a hundred of these criteria, and Google gives a numeric weight to every one of them, for every searchable term on every one of eight billion web pages. When a query arrives – which it does at the rate of many times every second – Google searches the index for the relevant terms, measures the relevance of the results using all its various metrics including PageRank, crunches out a single number for each page, and lists them, with the highest score at the top, usually within half a second or so.

Even if you didn't know a thing about computers, you could tell this involved a truly scary amount of computational power. This is another area in which Google's origins show up as a strength. When the program was first conceived, Page thought he would be able to download an entire copy of the internet to his own PC. That turned out not to be the case: Page and Brin ended up having to scrounge, cadge, rustle up and 'borrow' every scrap of computational power they could find at Stanford to gather the necessary data. What they learned in the process became one of their great strengths. Google does not run on huge, expensive mainframe computers but on a very large number of bog-standard, over-the-counter PCs, the same sort used by ordinary mortals. The PCs are tweaked and cabled together in particular ways to provide Google's 'special sauce' – this is one of the revelations in David Vise's book – and run a customised, stripped-down version of Linux. When a PC breaks, they chuck it away and replace it. Nobody knows just how many of these PCs Google has. John Hennessy, the president of Stanford and a Google board member, says that it's 'the largest computer system in the world' – Vise puts the figure at more than 100,000 PCs. Without their experience in graduate student bodging, the founders of Google would never have learned how to put together a computer cluster that combined such replaceable simplicity with such computational muscle. Its main problem these days is the heat generated by all those silicon chips.

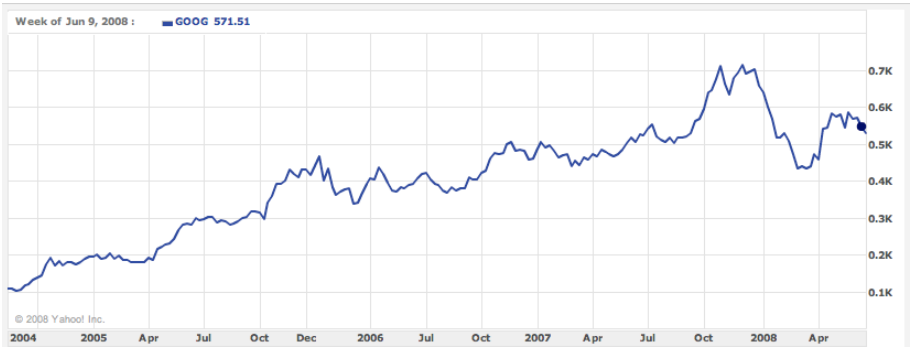
The boys took the company public in 2004, leaving it as late as they could, this being one of the many ways in which Google diverged from the Silicon Valley norm during the long-lost boom. The general pattern during the internet gold rush was to launch a company as early as possible, and hope that investors bought the shares before the company ran out of cash. That was because most dot.coms had no money; their business model involved truly spectacular revenue projections, set some distance in the future. A standard pitch started by pointing out the size of some market – to take the example used in the cautionary documentary Dot.Com, that for paying parking tickets. Say $1 billion worth of parking tickets are paid every year. Say the company servicing the payments earns 30 per cent of the fee. Say you could set up an online service to pay these tickets, and then – and this was the enticingly pseudo-sensible part of the pitch – take into account that only, say, 20 per cent of the public will be willing to pay in this convenient new way. Lo, you have just created a business with annual revenue of $60 million, and extraordinary potential to expand when other local or national government payment services migrate online. Your company is now worth a couple of billion dollars. Or it will be soon. 'Grow big fast!' (That was one of the battle-cries of the internet age.) 'If you build it, they will come!' (That was another.) Set up an Initial Public Offering, quick! There's gold in them thar bills!

Fresh new thinking along these lines caused one of the greatest destructions of capital ever seen. Google's route was superficially similar. They concentrated on making their search technology the best. Traffic to the site grew at great speed, all without a cent spent on marketing. The company had as yet no business model; as one of its directors said, 'we'll figure out how to monetise that.' This was exactly the thinking that cost so many people so much money. The difference was that Google managed to do it, and they did so by building a huge business in the most nickel-and-dime way imaginable, through small ads. Next time you do a search on Google, have a look at the 'Sponsored Links' on

the right of the results. These are paid advertisements. The ads have been bid for by people who bid for specific words, or combinations of words: 75¢ for 'digital camera', to take an example from The Google Story, but $1.08 for 'digital cameras' (because people who click on the plural are more likely actually to buy them), or $30 for 'mesothelioma' (because the people who place the ads are personal injury lawyers looking for clients who want to sue whoever it was they think gave them this particular cancer). Many of the words cost only a few cents to bid for: 30¢ for 'pet food', for instance. If you click on one of the links, the advertiser pays Google the agreed amount.

Google's ads are so effective at generating income because they tap directly into the intentions of people looking for things. An ad in any normal medium is, to one degree or another, a form of broadcasting: it will appear in front of many people who have no interest in it, en route to finding the minority on whom it will exert some grip. Google's ads appear only in front of people who are already looking for the thing they are advertising; they are as narrowcast as advertising can possibly be. The general realisation of this was accompanied by the dawning knowledge that Google in effect has a direct line, if not quite to the unconscious dreaming mind of the world, at least to the part of it which voices its wishes. This was something no one foresaw about the internet, that its 'killer app' – the thing which made it indispensable to ordinary people – was the ability to find services and information. The received wisdom in the business was that search was a 'commodity', something it was simple to buy from the cheapest provider. In disproving that, Google showed that it was wired straight into the global id.

The underlying idea of search-plus-ads was not original: a company called Overture was already doing the same (and Google later settled a suit from Overture out of court). But nobody did it anywhere near as well as Google, and the success of Ad Words (as it is called) is the reason Google, instead of rushing to the stock market as quickly as possible, which is what everyone else did, took as long as they could to go public. They knew that as soon as their revenue figures were disclosed, everyone would go nuts, and their competitors would begin knocking themselves out to get into this amazing new business of search-plus-ads. They had a secret, and it was the opposite secret from every other internet start-up: their secret was that they were already making a ton of money. They have continued to do so. Google in the six months to 30 June 2005 earned $2.6 billion, almost entirely from its ads. It was sitting on more than $3 billion and had no borrowings, and it has since raised another $4 billion in cash. This sheer financial muscle is the reason Google is now such a power in the world.

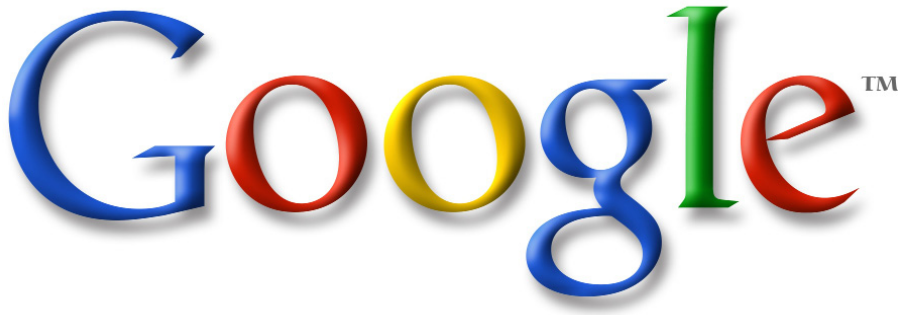


The financial success of Google since its IPO means that Page and Brin can now do more or less what they like. The limits on their company are set not by what they can afford but by what they can conceive and bring off. The stated mission of Google is 'to organise the world's information and make it universally accessible and useful', an immodest project, to put it mildly, but one on which Google is at least in a position to make a decent start. But the remorseless focus implied by that 'mission statement' is a little misleading, since the company's philosophy is to give bright people a free rein to attack the problems that interest them, and 20 per cent of employees' time is devoted to pet projects of their own devising. This makes Google a great centre of 'if you build it, they will come,' and means that the company is constantly coming up with new schemes and wheezes, not all of which make a coherent whole, but which tend at the least to be

interesting ideas. It also means that barely a day goes by without a news story touching on Google in some respect or other.

Since I began writing this piece Google has been in the headlines several times: for governments' complaints about the spy-friendly potential of the all too detailed satellite maps in Google Earth; for a new feature called Music Search, which does what it says on the tin; for announcing a plan to take a 5 per cent stake in AOL; for being vulnerable to 'black hat' tactics from Search Engine Optimisers, who specialise in boosting Google results; and for hugely expanding its nascent Google Video service. The media are obsessed with Google, not least because they are so worried by it. (The general consensus is that Google, having once been seen as a technology company, should instead be regarded as a media company. You may not think it matters, but money people like to see things through the prism of a 'business model'.) Other recent stories have concerned Google's offering the whole of San Francisco free wireless access to the internet, setting up a free Google Space at Heathrow airport to allow people to use its products, launching Google Talk as a potentially disruptive way of making free phone calls over the internet, pressing on with its ambitions for Google Book Search (formerly Google Library) to 'make the full text of all the world's books searchable by anyone', and launching Google Base to take over the world's classified advertising market. In the meantime, the company has launched a Toolbar, including a Desktop Search tool which searches for information on users' own PCs – something Microsoft, the world's biggest software company, has been trying and failing to do for a number of years.

What scares people about this is the feeling that Google has a masterplan, and that they are advancing towards world information and financial dominance. It isn't clear that that's right, though. My sense of it (and it's only a sense) is that Google advances more by letting its engineers invent things and solve problems, or perceived problems, one at a time, and that as long as the problem being solved broadly fits with the overall mission statement, they'll go ahead with it. Some of these stabs seem well thought out, others less so. At the same time the core focus on search stays. People who work in the field say that search is only 5 per cent 'solved', and that the huge amount of information located on the internet but (for a variety of reasons) unavailable to searches remains an enormously difficult problem to solve. It seems likely that this focus will give the company plenty to chew on for many years, even after the overheated share price cools off.



So: is Google a good thing? The geek in me wants to say yes. It certainly has made finding information incomparably easier. Some of the information is even true … Actually, that's not fair, but a lot of what is on the net is false, and the Google-derived mistake is something you do now notice in the mainstream media. One example occurred on the death of Hunter S. Thompson. When he died, several newspapers shared with us, often in the opening sentence, President Nixon's opinion that 'Hunter S. Thompson represented the dark, venal and incurably violent side of the American character.' Except (as any Hunter S. Thompson fan will tell you) Nixon didn't say that about Thompson, Thompson said it about Nixon. But a site giving the line the wrong way around was the first thing to come up on Google on the day of Thompson's death.

Despite such glitches, Google is from the research point of view invaluable. I've used it on a more or less daily basis for the last five years, but it was only when I began working on this piece that I fully realised just how many features it has added, as part of an

ambition to do 'something intelligent' with every query. Google Scholar, which searches academic papers, is very useful, and will become more so. The powerful calculator feature, which will do advanced maths as well as highly practical things like converting square feet into metres, is useful. The character ~ lets you search for synonyms, and is useful. Google News, which was invented by an engineer, Krishna Bharat, using his 20 per cent time to come up with a broadly global news service in the wake of 9/11, is useful, and terrifies conventional news organisations. The translation service isn't useful yet, but I bet it will be one day. The command 'define' is a useful quick way of finding what a word means. The blog search is fairly handy and will get better. Google Earth isn't particularly useful, but it is brutally cool: you begin with a satellite view and gradually descend to earth, homing in with a level of detail which can give you a view of your own house (also, it turns out, of secret military installations). Gmail, with its super-swift searching and 2GB of free space, is amazing, if you don't mind the fact that your email is scanned and used to target ads (and stored indefinitely). Google Maps is useful, and, because Google lets people write APIs (application programming interfaces) to adapt its programs in ways they find personally helpful, will grow more and more useful over time. One dark example: an API giving a map of sex offenders in the USA, which lets people see whether there are any registered sex offenders near them, and where the sex offender lives. Nice.

On a lighter note, Froogle, the shopping search service, is sort of useful, and has a feature which chills the blood of conventional retailers: when you're out in the high street and see something you want to buy, you can text its name to 64664 and Froogle will text back the best price it can find online. Also cool is Google Zeitgeist, which tells you which search terms have most increased in frequency in the past year. For 2005 the top five items are Myspace, Ares, Baidu, Wikipedia and Orkut – all of which, I notice in my trendspotting hat, involve some sort of sharing, searching, meeting or collaborating online. It must be said that the coolness of Zeitgeist is reduced by the fact that it no longer lists the most declining search terms. In 2002, the last year they gave this info, the five most increased searches were for Spider-Man, Shakira, Winter Olympics, World Cup and Avril Lavigne; the five most decreased searches were for Nostradamus, Napster, Anthrax, World Trade Center and Osama bin Laden. Thus did we recover from the trauma of 9/11.

Technologically, Google is an amazing thing. As for whether it is a good thing, that depends on what happens next. The company is keen to stress that, because of the voting structure of its shareholdings, it remains in the control of its founders. It is keen to send little signals of its own geekiness: its official IPO filing, for instance, announced that it would sell $2,718,281,828 worth of shares – a number based on e, the so-called natural logarithm, a number intimately familiar to maths nerds. On 18 August last year the company announced that it would sell 14,159,265 shares, with the intention of raising about $4 billion in cash, to do they would not say what – the point here (apart from the huge amount of money) being that the number of shares was based on the value of pi, 3.14159265. And then there's the fact that Google makes itself available in dozens of languages, including pig Latin and Klingon. These unfunny semi-jokes are designed to show that Google is rooted in the same comp. sci. culture in which it was born, and retains the same focus on the pure excellence of its products.

That does not mean that Google is always aware of the consequences of its actions in the wider world. A strength of the firm – its rootedness in grad student nerd culture – is also a weakness, in the form of a certain arrogance and unwillingness to pay attention to views emanating from lesser forms of life. The example of this currently preoccupying the publishing business is Google Book Search, the plan to scan all the world's books and have them available for search. This sounds ambitious, to put it mildly, but Google have the resources and the determination to do it, and they have been working at it for some time, beginning with the libraries of Michigan, Stanford and Oxford. They are digitising millions of books in these collections, and have already begun providing access to the out of copyright volumes. Google began to digitise currently copyrighted books in America until they were stopped by a lawsuit from the American Association of Publishers.

A fundamental clash of cultures is at work here. To Google, with its mission to 'organise the world's information and make it universally accessible and useful', it is obvious that books, which contain so much information – accurate information too, far more so than on the web – must be searchable online. The plan is not simply to give the books away: although the whole book will be scanned and stored, only specific fragments of text will be displayed. It will be the best shop window ever for obscure texts. Besides, isn't their company policy 'Don't be evil'? But to publishers, there is something outrageously hypocritical about the contrast between Google's ferocious protection of its own intellectual property rights and its contempt for everyone else's. What's to stop Google giving free online access to the books once they are scanned? It's probably against the law, sure, but a sufficiently ruthless company which perceived a sufficiently strong demand could find ways around that. Once the texts were scanned and stored, the only thing preventing every writer's work from being given away free would be a few pieces of computer code on Google's servers. At the moment Google say they have no intention of providing access to this content; but why should anybody believe them?

More generally, the biggest single area of worry about Google involves privacy. This has been a long-running subject of concern on the net, but thanks to an op-ed piece in the New York Times in November it has begun to attract some wider attention. The paper pointed out that the prosecution in a recent North Carolina strangulation case drew into evidence the fact that the defendant had made Google searches on the words 'neck' and 'snap'. This brought to wider notice the fact that Google logs all the searches made on it, and stores this information indefinitely; and Google installs a cookie on the computer of everyone who uses it, which helps log that user's searches, and which isn't due to expire until 2038. Because every computer has a unique IP address, every visit to every website can be traced back to the computer making it – a fact well known in geek circles but remarkably under-publicised outside them. (Last April a Chinese journalist called Shi Tao was given ten years in jail for 'leaking state secrets' after Yahoo! in Hong Kong handed over information linking his IP address and his email to the Chinese authorities.) Users of Google's Gmail service have already given the company their identity, a full record of all their searches, and copies of all their emails, stored indefinitely. According to the tech guru Robert Cringely, the future of Google lies in combining the company's knowledge of who you are with its Google Video service to produce microscopically targeted TV ads. 'Google imagines a world where only single people see match.com ads, and people who can't drive see ads from taxi companies where others see Toyota campaigns. Where fraternities see ads for strip clubs, beer, Cancun weekends and LSAT prep courses, and only seniors (and their adult children) see ads for Alzheimer's drugs.' In case that doesn't seem sufficiently dystopian, one should bear in mind that the information stored at Google is vulnerable to legal subpoena. It's not hard to imagine this information being sought by governments, litigants or divorcing spouses, and the list does not stop there. Google badly needs to develop tools which ensure privacy.

The alarming potency of Google as a way of finding out information about people is a different subject; though the fact that its potency can be alarming is not in dispute. A journalist at Cnet, a tech-news portal, did half an hour's Google research on Eric Schmidt, the chief executive of the company, and published the results, by way of showing just how effective Google was at this kind of thing. Schmidt, outraged, threw a major strop and Google announced it would not speak to anyone from Cnet for a year (so there!). But personal information is easily found, especially in America, where phone directories are reverse-searchable and social security numbers are simply obtained. So far, everyone who has invested in Google has made out like the proverbial bandit; but one day the share price will drop, and people who've bought shares will find that they've lost

money. It is then that Google's leaders will come under pressure to find some uses for that unprecedented goldmine of personal data. As for privacy in relation to governments, the company's existing privacy policy says that 'we may share information' if 'we conclude that we are required by law or have a good faith belief that access, preservation or disclosure of such information is reasonably necessary to protect the rights, property or safety of Google, its users or the public.' You don't have to be Diogenes the Cynic to think that this gives Google the latitude to do pretty much whatever it wants. Let's not forget that in February 2004 Google, having brought its news service to China, immediately gave in to the Chinese government and omitted links to sites which the Chinese government did not want its citizens to see. This was the first big test of Google's loudly proclaimed 'Don't be evil' policy in a context where the company would have been preferring principle to money, and it was one they failed.

◀ Goooooooooooooooooooogle ▶

Putting all this together, we reach the conclusion that, on the one hand, Google is cool. On the other hand, Google has the potential to destroy the publishing industry, the newspaper business, high street retailing and our privacy. Not that it will necessarily do any of these things, but for the first time, considered soberly, these things are technologically possible. The company is rich and determined and is not going away any time soon. They know what they are doing technologically; socially, though, they can't possibly know, and I don't think anyone else can either. These are the earliest days in a process of what may turn out to be radical change. The best historical analogy for where Google is today probably comes from the time when the railroads were being built. Everyone knew that trains and railways would change the world, but no one predicted the invention of suburbs. Google, and the increased flow of information on which it rides and from which it benefits, is the railway. I don't think we've yet seen the first suburbs.

John Lanchester

- *The Google Story* by David Vise
- *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture* by John Battelle <http://www.lrb.co.uk/v28/n02/print/lanc01_.html>

5.4 Entertainment is net's future

A difficult area in recent years for the intellectual property community has been the use of the internet to access information in what they consider to be illegal forms. Probably the key example of that was access to illegal music downloads, through Napster and other various forms of access.

I think it is not exactly clear what the best solutions to this are, but there have been some examples, like iPod, where people are willing to pay for music, and it is put on a more firm legal basis. I think ultimately that any attempts to make the internet watertight, or leak proof, so that you couldn't have any of this material, are doomed to failure.

This is because if anybody can see a movie, if anybody can hear a sound and they have the technical wherewithal, they can do the digitisation. It may not be the same quality as the original, but they could create it and they could put it forth on the net. So I think part of the issue here is one of education, part of it is economics.

If you can get a large enough community doing this the cost of access can be made so small that it wouldn't pay anybody to even think about circumventing those systems. I think good means of authentication, good means of access control can help a lot. A lot of this peer-to-peer file sharing has really exacerbated the problem, but it is one that increasingly as we get a better understanding of we'll be able to leverage it properly.

Money-spinner?

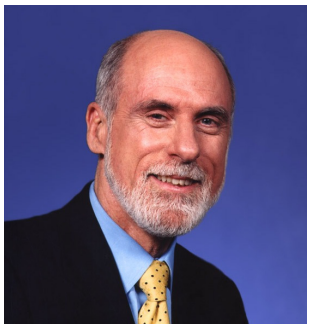
As to whether I regret not turning the internet around into something that could make a lot of money, that Bill Gates could end up controlling, I don't want to go there! Bill Gates was not around when we did that work in the original timeframe. I think there is a real advantage to having created this technology in a neutral environment. Many people could contribute to it because it was a neutral, intermediate protocol that was not known by any one party. I think if we had tried to make a lot of money, personally, the internet would not have happened.

The fact that people around the world can communicate with each other in ways that they never envisioned before gives me a lot of pride. I am very happy with the fact that access to information is so much easier. But on the downside, there are all of the bad things that have come about, which in some ways I suppose we should have predicted, but we weren't thinking about that.

But virtually every technology that has ever been invented has a downside. Fire can burn things up, more people probably die in car accidents than any other form of external thing. But as long as the positives outweigh the negatives, then I think you have got a viable technology. In this case I think the positives in the internet so dramatically outweigh the negatives that there is no contest.

Towards an internet in space

The internet, or at least the protocols behind it, are being extended into space. The man credited by many with having created the net, Vint Cerf, explains his vision of an interplanetary net.



Dr Vinton Gray "Vint" Cerf
Dr Cerf is credited with having created the Internet

In the spring of 1973 one of my colleagues, Robert Kahn, described to me the different networks that he was working on: the Arpanet that he and I both participated in, a mobile radio system, and a satellite-based data system. His problem was 'how do I get all three of these networks to inter-work with each other?'. We called that the "inter-net" problem because we were trying to get different "nets" to talk to each other.

Within about six months of that meeting, we had come up with a basic design of what we now know today as the internet. We made a detailed description and by May 1974, we had published a paper that described how this could work and what the various pieces were. That thing we described more than 30 years ago is in large measure what you have today. We did not have all the applications written out, but we had the underlying infrastructure for the communication.

I then asked myself a question: What might we do to take advantage of what we have learned in building networks? The internet in particular, this global system – what might we do to take those lessons and apply them to the support of the exploration of the solar system?

Whenever we launch a spacecraft it has on board a collection of instruments to sense various things. It could be high quality photography, or things to sense infrared, or types of minerals and things like that that are on the surface of the planet. We are trying to find out what is out there but in order to get that information back to Earth we have to communicate. What we are looking at now is the possibility of using the internet kinds of protocols to support the communications for spacecrafts that are moving around in the solar system.

When you get it out in space everything is different. For one thing everything is a lot further apart. For example, Earth and Mars are 35 million miles apart from each other, when closest together in their respective orbits around the Sun. They are 235 million miles apart when farthest apart in their orbits. At the speed of light, 186,000 miles per second, it takes five minutes for the light signal or radio signal to go from Earth to Mars when they are closest together, and 20 minutes when they are farthest apart.

The notion of trying to control a device remotely when it is very, very far away is an amusing image. You can imagine seeing an image which is 20 minutes old coming from Mars, so you are seeing where your rover was 20 minutes ago. If you want to move it somewhere, you move the joystick to say "go right' – but the rover will not hear that for another 20 minutes, so we have this 40 minutes' round-trip time. If you have steered it in some direction which is going to get it in trouble, like going over a cliff, by the time you find out 20 minutes later it is long gone. So there is no such notion as "now" in an environment where things are so far apart.

We have made a considerable amount of progress in the last few years. The project started around the spring time of 1998, and since then, we have gone through several iterations of the communication protocol design – the details of how you communicate in this strange environment.

What we have managed to do is to get several layers of protocols specified. All of these kinds of network protocols come in like layers of a layer cake. We defined the lower two levels: they are already on board the two rovers, Spirit and Opportunity, that are on the surface of Mars today.

The other layers of protocol that we are testing here on planet Earth, we hope to send to outer space in around 2009 with a specialised telecommunications orbiter. We are not too many years away from having a kind of two-planet internet in operation.

6 Beyond the PC

6.1 Sony ex-chairman warns on future

Japan's consumer electronics industry is dying, Sony's former chief says.

Consumer electronics firms in Japan needed to merge and adapt to a world where the TV was becoming a portal to the internet, Nobuyuki Idei said. Mr Idei, who is still chief corporate adviser to the company, said Sony had suffered from high costs during a period of global competition. Meanwhile, other countries' firms had powered ahead – with Korean firms in particular winning new business.

In a frank interview at the European Technology Round Table in Barcelona, Nobuyuki Idei explained what had gone wrong during his 10-year tenure at the helm of Sony. Mr Idei ran Sony from 1995 to 2005 – a period when the Japanese giant's fortunes suffered, with its finances faltering and rival products such Microsoft's Xbox and Apple's iPod eating into its reputation for world-beating innovation.

Asked to explain why Sony had been caught out by the iPod's success, he said that Apple chief Steve Jobs liked Sony and had studied its record carefully. "He'd have probably liked to be Sony's CEO," he said.

The success of Microsoft's Xbox 360 games console in beating Sony's Play-station 3 to market was because "Microsoft is not a technology company", he said. Sony, he explained, had gone down the route of developing a new processor with IBM for the PS3 and that had caused delays.

http://news.bbc.co.uk/2/hi/business/6033527.stm

6.2 Steve Jobs speaks out

In an exclusive interview, Apple's CEO talked with Fortune senior editor Betsy Morris in February in Kona, Hawaii, where he was vacationing with his family in February 2008. Here are excerpts:

- **On Apple's focus**
  Apple is a $30 billion company, yet we've got less than 30 major products. I don't know if that's ever been done before. Certainly the great consumer electronics companies of the past had thousands of products. We tend to focus much more. People think focus means saying yes to the thing you've got to focus on. But that's not what it means at all. It means saying no to the hundred other good ideas that there are. You have to pick carefully.
  I'm actually as proud of many of the things we haven't done as the things we have done. The clearest example was when we were pressured for years to do a PDA, and I realised one day that 90% of the people who use a PDA only take information out of it on the road. They don't put information into it. Pretty soon cellphones are going to do that, so the PDA market's going to get reduced to a fraction of its current size, and it won't really be sustainable. So we decided not to get into it. If we had gotten into it, we wouldn't have had the resources to do the iPod. We probably wouldn't have seen it coming.

- **On choosing strategy**
  We do no market research. We don't hire consultants. The only consultants I've ever hired in my 10 years is one firm to analyse Gateway's retail strategy so I would not make some of the same mistakes they made [when launching Apple's retail stores]. But we never hire consultants, per se. We just want to make great products.
  When we created the iTunes Music Store, we did that because we thought it would be great to be able to buy music electronically, not because we had plans to redefine the music industry. I mean, it just seemed like writing on the wall, that eventually all music would be distributed electronically. That seemed obvious because why have the cost? The music industry has huge returns. Why have all this [overhead] when you can send electrons around easily?

- **On his management style**
  We've got 25,000 people at Apple. About 10,000 of them are in the stores. And my job is to work with sort of the top 100 people, that's what I do. That doesn't mean they're all vice presidents. Some of them are just key individual contributors. So when a good idea comes, you know, part of my job is to move it around, just see what different people think, get people talking about it, argue with people about it, get ideas moving among that group of 100 people, get different people together to explore different aspects of it quietly, and, you know – just explore things."

- **On finding talent**
  When I hire somebody really senior, competence is the ante. They have to be really smart. But the real issue for me is, Are they going to fall in love with Apple? Because if they fall in love with Apple, everything else will take care of itself. They'll want to do what's best for Apple, not what's best for them, what's best for Steve, or anybody else.
  Recruiting is hard. It's just finding the needles in the haystack. We do it ourselves and we spend a lot of time at it. I've participated in the hiring of maybe 5,000-plus people in my life. So I take it very seriously. You can't know enough in a one-hour interview. So, in the end, it's ultimately based on your gut. How do I feel about this person? What are they like when they're challenged? Why are they here? I ask everybody that: "Why are you here?" The answers themselves are not what you're looking for. It's the meta-data.

- **On what drives Apple employees**
  We don't get a chance to do that many things, and every one should be really excellent. Because this is our life. Life is brief, and then you die, you know? So this is what we've chosen to do with our life. We could be sitting in a monastery somewhere in Japan. We could be out sailing. Some of the [executive team] could be playing golf. They could be running other companies. And we've all chosen to do this with our lives. So it better be damn good. It better be worth it. And we think it is.

- **On why people want to work at Apple**
  The reason is because you can't do what you can do at Apple anywhere else. The engineering is long gone in most PC companies. In the consumer electronics companies, they don't understand the software parts of it. And so you really can't make the products that you can make at Apple anywhere else right now. Apple's the only company that has everything under one roof.
  There's no other company that could make a MacBook Air and the reason is that not only do we control the hardware, but we control the operating system. And it is the intimate interaction between the operating system and the hardware that allows us to do that. There is no intimate interaction between Windows and a Dell notebook.
  Our DNA is as a consumer company – for that individual customer who's voting thumbs up or thumbs down. That's who we think about. And we think that our job is to take responsibility for the complete user experience. And if it's not up to par, it's our fault, plain and simply.

- **On Apple's connection with the consumer**
  We did iTunes because we all love music. We made what we thought was the best jukebox in iTunes. Then we all wanted to carry our whole music libraries around with us. The team worked really hard. And the reason that they worked so hard is because we all wanted one. You know? I mean, the first few hundred customers were us.
  It's not about pop culture, and it's not about fooling people, and it's not about convincing people that they want something they don't. We figure out what we want. And I think we're pretty good at having the right discipline to think through whether a lot of other people are going to want it, too. That's what we get paid to do.
  So you can't go out and ask people, you know, what the next big [thing.] There's a great quote by Henry Ford, right? He said, "If I'd have asked my customers what they wanted, they would have told me 'A faster horse.'"

- **On the benefits of owning an operating system**
  That allows us to innovate at a much faster rate than if we had to wait for Microsoft, like everybody else does. Because Microsoft has their own timetable, for probably good reasons. I mean Vista took what – seven or eight years? It's hard to get your new feature that you need for your new hardware if it has to wait eight years. So we can set our own priorities and look at things in a more holistic way from the point of view of the customer. It also means that we can take it and we can make a version of it to fit in the iPhone and the iPod. And, you know, we certainly couldn't do that if we didn't own it.

- **On managing through the economic downturn**
  We've had one of these before, when the dot-com bubble burst. What I told our company was that we were just going to invest our way through the downturn, that we weren't going to lay off people, that we'd taken a tremendous amount of effort to get them into Apple in the first place – the last thing we were going to do is lay them off. And we were going to keep funding. In fact we were going to up our R&D budget so that we would be ahead of our competitors when the downturn was over. And that's exactly what we did. And it worked. And that's exactly what we'll do this time.

- **On catching tech's next wave**
  Things happen fairly slowly, you know. They do. These waves of technology, you can see them way before they happen, and you just have to choose wisely which ones you're going to surf. If you choose unwisely, then you can waste a lot of energy, but if you choose wisely it actually unfolds fairly slowly. It takes years.
  One of our biggest insights [years ago] was that we didn't want to get into any business where we didn't own or control the primary technology because you'll get your head handed to you.
  We realised that almost all – maybe all – of future consumer electronics, the primary technology was going to be software. And we were pretty good at software. We could do the operating system software. We could write applications on the Mac or even PC, like iTunes. We could write the software in the device, like you might put in an iPod or an iPhone or something. And we could write the back-end software that runs on a cloud, like iTunes.

So we could write all these different kinds of software and make it work seamlessly. And you ask yourself, What other companies can do that? It's a pretty short list. The reason that we were very excited about the phone, beyond that fact that we all hated our phones, was that we didn't see anyone else who could make that kind of contribution. None of the handset manufacturers really are strong in software.

- **On the birth of the iPhone**

  We all had cellphones. We just hated them, they were so awful to use. The software was terrible. The hardware wasn't very good. We talked to our friends, and they all hated their cellphones too. Everybody seemed to hate their phones. And we saw that these things really could become much more powerful and interesting to license. It's a huge market. I mean a billion phones get shipped every year, and that's almost an order of magnitude greater than the number of music players. It's four times the number of PCs that ship every year.
  It was a great challenge. Let's make a great phone that we fall in love with. And we've got the technology. We've got the miniaturization from the iPod. We've got the sophisticated operating system from Mac. Nobody had ever thought about putting operating systems as sophisticated as OS X inside a phone, so that was a real question. We had a big debate inside the company whether we could do that or not. And that was one where I had to adjudicate it and just say, "We're going to do it. Let's try." The smartest software guys were saying they can do it, so let's give them a shot. And they did.

6.3 Google's Android project

Rumors of Google's plans to enter the mobile phone market first emerged in July 2005, when Google acquired Android Inc., a small startup company based in Palo Alto, CA. At the time, little was known about Android Inc. other than they made software for mobile phones. At Google, the Android team developed a Linux-based OS which promised a flexible, upgradeable system for mobile devices. Meanwhile, Google lined up a series of handset makers and software partners and signalled to carriers that it was open to cooperation.

In December 2006, the BBC and The Wall Street Journal reported that Google was working hard to bring its search engine and applications to mobile devices. Rumours abounded that Google would launch a handset – dubbed *gPhone* – to compete head-on with the iPhone. However, on 5 November 2007, Google CEO Eric Schmidt dispelled all rumours of a stand-alone Google phone. He announced the birth of the Open Handset Alliance, a consortium aiming at developing open standards for mobile devices. Their first product, Android, is an open source mobile device platform based on Linux.

The Android platform has been very successful as a growing number of smartphone makers have adopted the system to compete with Apple's iPhone. Yet as Android is woven into more phones, manufacturers and developers have grown more concerned about the prospects for Android. "We are very careful about not splintering the code," says Eric Heiser, director of business development at Kyocera Communications. "That's definitely a concern, that's something Google has been talking about every day." What's more, the widening variety of Android devices could have the unintended consequence of confusing consumers and diluting its brand appeal.

7 Impact analysis

7.1 The assignment

The focus of the impact analysis is on how new technological inventions changed economics, labour, technology, politics, society, culture, and everyday life.

- Do an impact analysis of an invention or discovery, to be presented orally. The presentation should take a maximum of ten minutes.
- Be prepared to produce a written version of your impact analysis in a writing assignment. Your written assignment must include changes you have made based on the feedback you received on your oral presentation.

7.2 Points to consider

Every part and aspect of your presentation should relate to and illuminate the impact of the invention.

An impact analysis is not:

- a biography of the inventor.
  Mention only those facts about the inventor that are relevant to your topic.
- a history of the invention.
  Place the invention in its historical context in terms of the need it addressed or the problem it solved.
- technical process description.
  Offer just a brief explanation of how the invention works.

Be careful to distinguish between the usage of the invention and the impact of that usage or application. For example, electricity enabled us to develop trains and trams. Those are applications of electricity. What are the impacts of those applications? The impact is the focus of your presentation and essay!

Avoid generalities (e.g. “It had a big impact on daily life.”). Use precise information: comparisons, statistics, and other kinds of facts.

7.3 Structuring your presentation

Every good presentation consists of three distinct parts: an introduction, the body, and a conclusion.

Introduction

Your introduction should make it clear that your topic is the impact of the invention you are discussing, and not the invention itself.

- Create an attention-getting opening statement.
- Briefly address the following questions:
  * *What is this invention used for?*
    If there are diverse applications for it, name the main usages. You can also indicate the range of applications, naming the smallest and the largest, or the least important and most important.
  * *What main problem did or does this invention solve?*
  * *What was life like before this invention?*
    What are we able to do because of this invention, and what would we not be able to do if we did not have this invention?
  * *Who invented it, and when and where?*
  * *How did/does it work?*

The Body

Discuss the positive and negative impacts of the invention, then and now, on:

- Society
- The environment
- Economics
- Politics
- Culture
- Everyday life

The order in which you address these points will depend upon how you tell your story. There should be clear causal links between them, like a domino effect.

The Conclusion

To finish your presentation, you should answer these questions:

- What is the future role of this invention?
- Will it be replaced by a new technology, or will it continue to have an impact on our lives?

7.4 The qualities of a successful impact analysis

The presentation should be clear, concise (brief and to the point), focused, well structured, intelligent, interesting, lively and imaginative.

- You should have fun preparing and presenting it, and we should have fun listening to you.
- You – and we – should learn something new and surprising about the impact of the invention you are presenting.
- Your impact analysis must be your own story, told in your own language. Any student who simply prints out and presents information from the Internet (or any other source) will automatically fail the assignment, which will have a significant impact (!) on the final grade for the course.

7.5 Tips for preparing your impact analysis

First, make a list of the kind of information you feel your presentation should include.

- Do research to gather information. You will probably have to refer to more than one source to find the different kinds of information you need.
- Organise your information into categories (e.g. technical, social, economic, etc.)
- Based on what you have learned so far, use your imagination and knowledge to think about the impact this invention has had on areas of life not necessarily mentioned in any of your sources. For example, are certain people or regions of the world disadvantaged by not having access to this invention?
- Decide what kind of story would help you to present your findings in a logical and interesting way.
- Make an outline of the order in which the different elements of your story should appear.
- When you are satisfied with the structure of your outline, write your presentation. Use key words for your notes to avoid reading your presentation instead of talking to and looking at us.
- Feel free to illustrate your presentation with visuals and/or sound.

Great ideas – big problems

Conventional wisdom says that your big idea for a small business will gradually develop into the exact replica of what you imagined when you came up with the idea. The reality for many business owners is that the first idea only serves as the kernel for the one that will eventually fly.

By the time you actually launch the business, your idea will be moulded by market research, customer input, cost of development, and other information you learn in the research process. For this reason, it is important in the set-up stage not to become discouraged if you have to abandon part of your business idea or even your entire idea. You will need flexibility and perseverance to keep your business afloat, so applying it during the startup phase is good practice.

Unfortunately, some potential business owners abandon their ideas too easily believing that if an idea has flaws, the concept is unsalvageable. To help you avoid this trap, use the five instances of idea-roadblock listed here to determine how you can keep going if your idea isn't perfect.

1 Problems and possible solutions

1 **Lots of people are running businesses doing what you planned on doing.**
Examine the field and see if there is still room for you. Often, lots of businesses cater to the same customer, but leave some small niche underserved. For example, if you planned on starting a dance studio and you find that there are already too many in town, there may be a market for someone who goes to private parties and teaches large groups of people who don't have time to go to a dance studio. To find an underserved niche, look at the current offerings of your future competitors and think about what narrow markets you may be able to serve that they are overlooking.

2 **You are too late to market.**
Just because other companies beat you to market doesn't mean you won't be successful. In fact, the first company to market has to spend a lot of money educating buyers about why this new product or service is worth purchasing. You can also learn from the mistakes of your predecessors. For example, look at how Microsoft came into the spreadsheet market and took over with Excel after Lotus had been dominant with Lotus 1-2-3.

3 **Your research tells you the industry is flat.**
See if you can look at the business a totally new way. For example, a movie theatre owner in Europe recently entered a market that was saturated and suffering from a lack of customers. However, by starting a movie theatre with huge comfortable seats, lots of parking, and other amenities that transformed the movie-going experience, he was able to pack his theatre night after night.

4 You cannot find information to determine if your idea is viable.

The best way to learn about an industry is to talk to small business owners who are in it. Many entrepreneurs will be willing to share a few hours with you to explain how they got started, how the business works, and industry pros and cons. As long as you do not approach potential direct competitors, you will find many entrepreneurs helpful. You may need to call 50 people to find five who will help.

5 Set-up costs are too high

Start out as a contractor to a business that you want to create. For example, if you really want to own a bakery, but you cannot afford rent, start out by baking a few goods and supplying them to existing bakeries. Over time you can save enough money to have your own store. Or go to the next chapter…

2 Finding venture capital

Venture capital (aka VC or venture) is private equity capital which is provided either by institutional investors or wealthy individuals to potentially successful start-ups.. Venture capital investments are generally made as cash in exchange for a share in the invested business. In addition to money, venture capitalists

Venture capital is best suited for businesses which banks consider too risky to grant a loan, or which are too small to raise capital in the public markets. Of course, venture capitalists are interested in securing the success of the business they put their money in. Therefore, they often bring their managerial and technical expertise to help young the young entrepreneur get off the ground.

Furthermore, venture capitalists are of course interested in a return on their investment. As they assume a high risk by investing in such a venture, they usually demand a significant share in the business's ownership – and consequently in profits, when the business finally returns money.

2.1 Mike Markkula – the first investor in Apple

Mike Markkula worked as marketing manager for Fairchild Semiconductor and Intel, and made millions on stock options when he retired in 1974. He was only 32 years old at that time, and he came back from retirement when he was convinced that there was a market for personal computers in general, and the Apple II in particular.

In 1977, Markkula invested US$250,000 in the venture, $80,000 as an equity investment and $170,000 as a loan. This stake made him a one-third owner of Apple, which was eventually incorporated and became the fastest-growing company of its days. Wozniak, who had created the first two Apple computers, credits Markkula for the success of Apple more than himself.

2.2 The iFund – applications for the iPhone

ifund.mov

Watch this presentation by John Doerr, partner in Silicon Valley venture capital firm Kleiner Perkins Caufield & Byers, and answer these questions:

1 How much venture capital did it take to start:
   a Electronic Arts US$ _____
   b Amazon US$ _____
   c Google US$ _____

2 What is the size of the iFund? US$ _____

Do some Internet research to find the answers to these questions:

3 Why was KPCB different from other venture capital firms in those days?

4 What are the most notable companies that KPCB invested in?

5 What are KPCB's plan for the future?

2.3 Dragons' Den

Dragons' Den is a TV show format based on a Japanese series which Sony has successfully sold around the world. Its British version, hosted by Evan Davis, was first aired on BBC Two on 4 January 2005.

Contestants need funding for their business idea, and they are given the opportunity to present their business ideas to five potential investors, the "dragons." In their opening pitch, the contestants are required to specify the amount of money they want from the dragons, and also have to offer a certain equity in their business in exchange for the dragons' investment.

The rules of the show stipulate that the contestants must leave with nothing if they cannot raise at least the amount they pitch for. If one or more dragons find the business idea viable, they start to negotiate the amount of equity on offer. The contestants then have the opportunity to negotiate further, accept an offer, or simply walk away. Dragons can also offer a percentage of the money requested if they do not wish to commit the full amount, leaving the other dragons free to do the same.

Dominic Killinger's Square Mile Company

In 2006, Dominic turned to the dragons to raise money for wireless broadband access to boat owners in English marinas. Before you watch, do these tasks:

1 Match the expressions on the left with their definitions on the right.

1 *a pitch*	a a consumer
2 *a marina*	b about 2.5 cms
3 *an end user*	c wealthy, rich
4 *a berth holder*	d a port for yachts
5 *a niche market*	e a presentation
6 *a subscriber*	f intuition
7 *an aerial*	g a person signed up for a service
8 *an inch*	h an antenna
9 *domain expertise in …*	i intelligence
10 *acumen about …*	j a tiny part of a consumer group
11 *affluent*	k an area in which you have know-how
12 *a gut instinct*	l a boat parking space

2 What do you think?

1 Is this an innovative idea for a business venture? Why/why not?

2 What factors will guarantee the success of this business?

3 What sort of things would you want to know before you would be willing to part with your cash?

3 Now watch the scene and take down what do we learn about the following areas of Dominic's business. Note the information does not come in order.

killinger.mov

The entrepreneur - Dominic	
Investment, Return & what investment is needed for:	
Supplier details & status quo	
Reasons for success	
Market (actual and potential customers):	
Objectives of the company:	
Short term (1 yr) & Long term	
Product details & accessories:	
Price	
Distribution	
Promotion	
Future plan/ Expansion ideas	
Financial forecasts	

4 What do the Dragons decide to do? Complete this grid:

Dragon	Offer	Reasons why
Duncan		
Peter		
Theo		
Rachel		
Doug		
And you?		

Business plan

This section will help you create a business plan to guide your business through the start-up or growth phase, a search for capital, or any other endeavour your small business undertakes.

The typical business plan consists of seven key elements: **1 Introductory Elements**
2 Business Description
3 The Market
4 Development & Production
5 Sales & Marketing
6 Management
7 Financials

For each element, this hand-out provides a description, instructions for creation, and if necessary, tips for avoiding common pitfalls. But reading about something is not always enough, so you can find samples, worksheets, and glossaries at <http://home3.americanexpress.com/smallbusiness/tool/biz_plan/index.asp>.

1 Introductory elements

The introductory elements of your business plan – your cover page, executive summary, and table of contents – determine what kind of first impression you make on readers. In many cases, the introductory elements, especially the executive summary, will determine whether readers read the rest of your plan at all. Moreover, your table of contents indicates how well you have organised the entire plan. For this reason, all of your introductory elements must be top-notch both in presentation and substance.

1.1 Cover Page

The cover page should say "Business Plan," and should include:
name and business name
company logo
address
telephone number
fax number
E-mail address
The date should also appear on your cover page.

1.2 Executive Summary

The executive summary is what most readers will go to first. If it is not good, it may be the last thing they read about your company. Lenders in particular read executive summaries before looking at the rest of a plan to determine whether or

not they want to learn more about a business. Other readers will also go first to your executive summary to get a snapshot of your business and to gauge your professionalism and the viability of your business.
While your executive summary is the first part of your plan, write it last. As you create the other sections of your plan, designate sentences or sections for inclusion in your summary. You may not use these sections verbatim, but this exercise will remind you to include the essence of these sections in your summary. Your executive summary should be between one and three pages and should include your business concept, financial features, financial requirements, current state of your business, when it was formed, principal owners and key personnel, and major achievements.

1.3 Table of Contents

The table of contents provides readers with a quick and easy way to find particular sections of the plan. All pages of your business plan should be numbered and the table of contents should include page numbers. After you assemble your plan and number your pages, go back to the table of contents and insert page numbers. Be sure to list headings for major sections as well as for important subsections.

2 Business description

A typical business description section includes:
2.1 An overview of your industry
2.2 A discussion of your company
2.3 Descriptions of your products/services
2.4 Your positioning
2.5 Your pricing strategy

2.1 The Industry

Begin your business description with a brief overview of the industry you will be competing in. Ultimately, you want to demonstrate that you are in a "hot" industry with an excellent long-term outlook. You are also setting the stage for your company description by showing where you fit in the marketplace.
Discuss both the present situation in the industry, as well as future possibilities. Also provide information about the various market segments within the industry, with a particular focus on their potential impact on your business. Include any new products or other developments that will benefit or possibly hurt your business. Are there new markets and/or customers for a company such as yours? How will trends and other factors impact your venture?

2.2 Describe your company

The discussion of your company should begin with your mission statement – a one or two sentence description of the purpose of your business and to whom

your product or service is targeted. Not being clear in your mission statement indicates that you are not clear about the purpose of your company.

Once you have your mission statement, you can then discuss the more "technical" aspects of your company. Remember that you are telling your company's story, so even though there are specific areas you will need to cover, you will want to keep it lively and interesting. Some areas you should include are:

- What type of business is it? Wholesale? Retail? Manufacturing? Service?
- When was the company founded? Is it a start-up, or an established enterprise? What is the story behind the founding of the company?
- What is your business' legal structure? Sole proprietorship? Partnership? Corporation?
- Who are the principals and what pertinent experience do they bring?
- What market needs will you meet? Who will you sell to? How will your product(s) or service(s) be sold?
- What support systems will be utilised?
- Customer service? Advertising? Promotion?

2.3 Stress Your USP

Be sure to emphasise your USP – Unique Selling Proposition. Your USP is the proprietary information that sets your product or service apart from your competition. If you are using your business plan to solicit funds, this is what your reader will want to see. If it is an internal document, your USP will be critical to your sales and marketing strategies. Without a USP, your product or service will appear drab and there will be no compelling reason for people to buy it.

2.4 Positioning

Develop your position by answering the following questions with brief, direct statements:

- What is unique about your product or service?
- What customer needs does your product fulfil?
- How do you want people to view your products or services?
- How do your competitors position themselves?

2.5 Pricing

Discuss what you will charge for your product or service and how you derived the price. For example, a luxury gift importing business sets prices not only to cover costs and make a profit but to position products as luxury items. A printing shop

with a good location charges slightly more than its competition because it has a convenient location and it has determined that the market will bear the higher price.

Once you have briefly explained your pricing and rationale, discuss where this pricing strategy places you in the spectrum of the other providers of this product or service. Next, explain how your price will: get the product or service accepted, maintain and hopefully increase your market share in the face of competition, and produce profits.

3 The Market

This section is designed to provide enough facts to convince an investor, potential partner or other reader that your business has enough customers in a growing industry, and can garner sales despite the competition. It is one of the most important parts of the plan, taking into account current market size and trends, and may require extensive research. Many of the sections that follow – from manufacturing to marketing to the amount of money you need – will be based on the sales estimates you create here.

The market overview should contain data pertinent to:

3.1 Customers
3.2 Market Size and Trends
3.3 Competition
3.4 Estimated Sales

3.1 Customers

To create a customer definition, describe your target customers in terms of common identifiable characteristics. For example, a catering company could target professional couples in the metro area who need to hire caterers for their kids' parties. Or it could target corporate event planners responsible for procuring caterers for internal meetings. A windshield wiper blade business can sell directly to automobile manufacturers, or to aftermarket parts distributors.

3.2 Market Size and Trends

This section defines the total market size as well as the slice of the market your business will target. Use numbers as well as trend information to make a case for a viable current market and its growth potential.

After you define the total market, create a description of your target market by using geography, company size, business organization, lifestyle, sex, age, occupation, and other characteristics to describe the companies or consumers likely to buy your product or service. The Market Size Example provided might help.

3.3 Competition

The competition section indicates where your products or services fit in the competitive environment. Presenting your business in the landscape of its competitors proves that you understand your industry and may be prepared to cope with some of the barriers to your success.

Present a short discussion of each of your primary competitors. If possible, include their annual sales and their market share. Each assessment should include why these companies do or do not meet their customers' needs. You should then explain why you think you can capture a share of their business.

Strengths and weaknesses can fall into a number of different categories. Sales, quality, distribution, price, production capabilities, image, and breadth of products/services are all ways companies differentiate themselves. Ask yourself: Who is the price leader? Who is the quality leader? Who has the largest market share? Why have certain companies recently entered or withdrawn from the market? These factors are critical to a successful competitive analysis.

3.4 Estimated Sales

Estimated sales for your business are based on your assessment of:

- the advantages of your product or service
- your customers
- the size of your market
- your competition

This should include sales in units and currency for the next three years, with the first year broken down by quarter if that is appropriate for your industry. These numbers will be crucial to other financial documents you present later in the plan.

4 Development and Production

In this section you will describe the current state of your product or service and your plan for completing its development. This is also where you familiarise your reader with how your product is created or your service delivered. The sections to be included are:

4.1 Development Status
4.2 Production Process
4.3 Cost of Development
4.4 Labour Requirements
4.5 Expenses and Capital Requirements

4.1 Development Status

Describe the current status of your product or service and what remains to be done to make your product or service ready to be marketed. Include a schedule detailing when this work will be completed. Consider using a traditional outline to create a product development schedule, or modify the launch plan you have created for internal use and provide a simplified version here. Readers of your plan, especially potential investors, will scrutinise your development plan to determine if you have thoroughly thought through all facets of the development of your product or service.

4.2 Make or Buy

Part of your production process discussion will be a justification of the make or buy strategy for production components. Make or buy strategy focuses on whether you will create all components necessary for the production of your product or service in-house, or buy a service or a product to add to yours.

4.3 Cost of Production and Development

Present and discuss a design and development budget. This budget should include the cost of the design of a prototype as well as the expense to take it into production. Be sure to include labour, materials, consulting fees, and the cost of professionals such as attorneys. While the cost of production section may be more readily apparent to product companies, this section is important for all businesses. Service businesses have expenses such as consulting services, training for principals, and preparation of materials, among many other things.

4.4 Labour Requirements

Your management team is outlined in the management section. This section provides details of other labour you will need to start up and run your business. Address how many people you require and what skills they need to possess. Be sure to cover the following issues:

- Is there sufficient local labour? – If not, how will you recruit?

- Is labour trained? – If not, how will you train them?
- Cost of labour, current and future
- Plans for ongoing training

4.5 Expenses and Capital Requirements

You must also create three financial forms that will build a foundation for the Financials section of your plan: operating expenses, capital requirements, and cost of goods. Generate spreadsheets for the year in which you establish your business as well as projections for two years after. You may require the help of an accountant or someone familiar with the cost of doing business in your industry and chosen business.

Operating Expenses

By creating a financial form called Operating Expenses, you pull together the expenses incurred in running your business. Expense categories include: marketing, sales, and overhead. Overhead includes fixed expenses such as administrative costs and other expenses that remain constant regardless of how much business your company does. Overhead also includes variable expenses, such as travel, equipment leases, and supplies.

Capital Requirements

This form details the amount of money you will need to procure the equipment used to start up and continue operations of your business. Capital Requirements also includes depreciation details of all purchased equipment. To determine your capital requirements, think about anything in your business that will require capital. For a diaper delivery service this might be a van, washing machines and dryers, irons and ironing boards, and supplies. Manufacturing companies obviously require more equipment for production. This equipment can fall into three categories: testing, assembly, and packaging.

Cost of Goods

For a manufacturing company, the cost of goods is the cost incurred in the manufacturing of the product. For a retail or wholesale business, the cost of goods (sometimes called the cost of sales) is the purchase of inventory. To generate a Cost of Goods table, you need to know the total number of units you will sell for a year as well as what other inventory you have on hand, and at what stage of production those units exist. For a manufacturing company, the cost of goods table will include materials, labour, and overhead related specifically to product manufacturing.

5 Sales and Marketing

This section of your business plan describes both the strategy and tactics you will use to get customers to buy your products or services. Sales and marketing is the weak link in many business plans, so take your time with this section. A strong sales and marketing section can serve as a roadmap for you, or as assurance to potential investors that you have a workable plan and the resources for promoting and selling your products and services. The three components of your sales and marketing section include:

5.1 Strategy
5.2 Method of Sales
5.3 Advertising and Promotion
5.4 Sales and Marketing Strategy

5.1 Strategy

Your strategy may be only a few sentences in length, or it can be a couple of paragraphs. Important elements for a sales and marketing strategy include who you are targeting with your initial push and what customers you have designated for follow-up phases. Other elements of a sales and marketing strategy are:

- How will you find your prospects, and once you find them, how you plan to educate them about your product?
- For instance, if you are using direct mail, you might want to talk about what kinds of mailing lists you plan to purchase.
- What features of your product or service you emphasise to get customers to notice your product?
- What sort of innovative marketing or sales techniques will you use?For example, you may sell your product by mail order when your competitors use only traditional retail channels. Or you may be the first in your industry to offer leasing.
- Will you focus your efforts locally, regionally, or even internationally? Do you plan to extend your efforts beyond your initial region? Why?

5.2 Method of Sales

Describe available distribution channels and how you plan to use them.

Many entrepreneurs fail to give adequate thought to method of sales. How you get the products to the end user – your method of distribution and sales – is one of the most important elements of your plan. In this section you demonstrate the ability and knowledge to get your products into the hands of your target customers.

Will you be selling directly to your customers? Will you be using sales representatives, distributors, or brokers? Do you plan to have a direct sales force in place?

You must also elucidate your plan for reaching your distribution channels. Will you be selling directly to your customers? Will you be using sales representatives, distributors, or brokers? Do you plan to have a direct sales force in place? See the list of definitions for some help in determining what method of sales to use. Will you use a "ground service" like UPS? Will you use a next-day delivery service? Parcel post? A trucking company? Make sure to include these costs when you calculate your financials later in the plan.

5.3 Advertising and Promotion

Your advertising and promotion campaign is how you communicate information about your product or service. This section should include a description of all advertising vehicles you plan to use – newspapers, magazines, radio & TV, Yellow Pages, etc. – as well as your public relations program, sales/promotional materials (such as brochures and product sheets), package design, trade show efforts, and the like. If you're using an advertising and/or a PR agency, be sure to discuss their talents and what efforts they are contracted to make on your behalf.

6 Management

A good management team can take even a mediocre idea and make it fly. In fact, strong entrepreneurial teams have been known to move from business idea to business idea, repeatedly creating and running thriving companies. Conversely, weak management often cannot build a strong business out of even the best idea. For this reason, the management section of your business plan must demonstrate that the team you have assembled, or will assemble, is a winner. This section should contain the following items:

6.1 Description
6.2 Ownership
6.3 Board of Directors/Board of Advisors
6.4 Support Services (if applicable)

6.1 Management Description

In this section, describe management including the responsibilities and expertise of each person. Many lenders base their investment decisions on the strength of the principals. Demonstrating that your management team possesses, or will possess, an array of complementary skills will help convince investors that your business has a bright future.

For positions you have yet to fill, detail who you will need to hire to achieve the goals set out in the product development schedule. Describe the talents this person needs to possess and how the addition of that person will help the company meet its objectives.

6.2 Ownership

A short section on who owns and controls your company will help readers derive a better understanding of who will be making decisions. Potential lenders, many of whom will require a significant stake in the company in exchange for funds, will also be interested in what portion of the company's equity is available.

6.3 Board of Directors/Board of Advisors

A strong board of directors or board of advisors is an asset to a business. It adds credibility to your management team and increases your likelihood of success. Outline who is on your board, listing their names, employment, training, education, and expertise. Highlight each board members' experiences and how they will help your business thrive.

7 Financials

Financials are used to document, justify, and convince. This is the section in which you make your case in words and back up what you say with financial statements and forms that document the viability of your business and its soundness as an investment. It's also where you indicate that you have evaluated the risks associated with your venture. If you are writing a plan for investors, include the following sections:

7.1 Risks
7.2 Cash Flow Statement
7.3 Balance Sheet
7.4 Income Statement
7.5 Funding Request and Return

7.1 Risks

No business is without risks. Your ability to identify and discuss them demonstrates your skills as a manager and increases your credibility with potential investors. You will show that you've taken the initiative to confront these issues and are capable of handling them. The opposite is also true. Should a potential investor discover any unstated negative factors, it will undermine the credibility of your plan and endanger your chances of gaining financing or other support.

The following list of problems is by no means complete, but should give you an idea of some possibilities:

- Your competitors cut their prices
- A key customer cancels a contract
- The industry's growth rate drops
- Design or manufacturing costs exceed your projections
- Your sales projections are not achieved

- An important ad campaign flounders
- Important subcontractors fail to make deliveries
- Your competitors up-the-ante by releasing a better product or service
- Public opinion of your product or service changes
- You can't find trained labour

7.2 Cash Flow Statement

A cash flow statement shows readers of your business plan how much money you will need, when you will need it, and where the money will come from. In general terms, the cash flow statement looks at cash and sources of revenue minus expenses and capital requirements to derive a net cash flow figure. A cash flow statement provides a glimpse of how much money a business has at any given time and when it is likely to need more cash. Analyse the results of the cash flow statement briefly and include this analysis in your business plan.

7.3 Balance Sheet

Unlike other financial statements a balance sheet is created only once a year to calculate the net worth of a business. If your business plan is for a start-up business, you will need to include a personal balance sheet summarizing your personal assets and liabilities. If your business exists already, include past years' balance sheets up to the balance sheet from your last reporting period. Analyse the results of the balance sheet briefly and include this analysis in your business plan.

Follow these tips:

- As with all financial documents, have your balance sheet prepared or at least reviewed by a reputable accountant.
- Do not include "projections" that include dates and events already in the past. Old projections are more tolerable if your projections were right than wrong.
- Avoid large income or expense categories that are lumped together without backup information about the components.

7.4 Income Statement

The income statement is where you make a case for your business' potential to generate cash. This document is where you record revenue, expenses, capital, and cost of goods. The outcome of the combination of these elements demonstrates how much money your business made or will make, or lost or will lose, during the year. An income statement and a cash flow statement differ in that an income statement does not include details of when revenue was collected or expenses paid.

An income statement for a business plan should be broken out by month the first year. The second year can be broken down quarterly, and annually for each year after. Analyse the results of the income statement briefly and include this analysis in your business plan. If your business already exists, include income statements for previous years.

7.5 Funding Request and Return

State the amount of funding and the type (debt or equity) of investment you seek. It is important here to provide a breakdown of how the money will be applied. Discuss what effect the capital will have on the business' potential to grow and profit, when the money is needed, and what investment has already been made in the company.

Investors will also want to know what they will receive in return for their capital. Be as clear as you can in this section both about the potential upside and the potential downside of investing in your business. A common mistake in a business plan is to be unclear in this section, which turns potential investors away. If the company founders have invested in the company, include this in your plan. Some investors are encouraged by founders putting their own money on the line.

Finally, create an exit plan that describes how investors will get their money out of your company. One common investor worry is that even if a business is profitable, it may be difficult for them to get a good price for their shares. A cash-out option in five years or assurance that the company will become a strong candidate for a purchase or an IPO (Initial Public Offering) are what many venture capitalists and lenders will insist upon.

Adapted from: <http://home3.americanexpress.com/smallbusiness/tool/biz_plan/index.asp>