

Chapter 2

The Second Invisible Hand of the Market

2.1 What is the New Economy?

Both the New Economy itself and the lifestyle to which it gives rise are inextricably linked with texts (in the broadest sense of the word): with their production, distribution and consumption. On this basis it is defined as an information economy. A detailed analysis of the New Economy would call for a separate extensive treatise which would only distract us from our topic, so we will restrict ourselves to trying to establish its main distinguishing features.

One of the obvious features of the New Economy has been the preceding growth of costs associated with information processing (so-called transaction costs) as against expenditure on the physical manufacture of goods (transformation costs). Institutional economics has long been familiar with the concept of transaction costs (Ronald Coase). They occur all over the place and relate to all manner of agreements, coordination and interpretation, but like friction they are inconspicuous and difficult to register even when great efforts are made to do so. In the few attempts made to measure them (one was undertaken by Douglass North) about 40% of all expenditure in the business environment was found to be of this kind. Today the figure is probably even higher since the proportion of costs spent creating and processing information is constantly rising. Oddly enough, no one has ever tried to calculate the retail end user's costs. This is not to say that the lawsuits resulting from transaction costs have finally become more significant than the extraction of hydrocarbons or the crop yields of wheat, but, bearing in mind their importance, we can safely say they have been under-researched and underestimated.

The next key characteristic of the New Economy is the sharp increase in the proportion of non-material, non-utilitarian goods in the structure of consumption. These include not only media consumption, not only the realm of culture (cinema,

literature, music), which is natural, but also, without exception, every aspect of everyday life which until not long ago was considered to be, and was, utilitarian.

Objects are increasingly used not merely as possessions with useful properties, but as signs, symbols, cultural codes – in brief, as signals and messages. Consuming goods, a person enters into relations with other people: people communicate through their possessions. This process of a large-scale move from utility to symbolism accelerated about half a century ago and was identified by such theoreticians of consumer society as Georges Bataille, Jean Baudrillard, Pierre Bourdieu and Roland Barthes. At that time the new lifestyle was only beginning to appear and their works were prophetic. Now these processes have become so evident that they show up in statistics. That is why now we can and must move from political economics to applied economics, with laws and formulae which enable us to anticipate the course of events. This, indeed, is one of this book's tasks: to identify data which the economics of the New Economy can operate with, and to indicate how they can be collected.

But let us return to the differences between the New Economy and the old. In parallel to changes in the structure of consumption, which is becoming increasingly diverse, individual, and sophisticated, there is a change in the correlation between production and commerce. It is becoming cheaper to manufacture than to sell. The proportion of factory costs in the retail price of goods is decreasing. In several industries the retail price is five or even ten times more than the production cost, and a two to three times markup is almost standard. The markup is determined by costs associated with delivering goods to the retail customer, and a substantial part of these relate to information. Commerce earns its cut legitimately by creating information about demand. A large increase in the retail price over the factory gate cost is a reliable indicator that a particular industry is in the camp of the New Economy. It also indicates unambiguously that the new "information" economy is not confined to the media and entertainment, or to the cultural industries (which include the internet). It also includes such traditional segments of the market as clothing, furniture, electronic household appliances and cars which, despite their thoroughly material appearance, nowadays belong to the information industries and are functioning in accordance with the rules of the New Economy.

We can also list signs of the New Economy which are in strict accordance with traditional economic logic. For example, goods cease to be used long before they have actually worn out. Moral depreciation has overtaken physical depreciation. Possessions are not fully used and could carry on in service for a long time, but are written off because they are out of fashion. They become not just unusable but positively damaging since they discredit their owner in the eyes of those around him. Another sign of the times is that in the past the value of most goods could be assessed fairly accurately by such attributes as weight, size and power. Now products are migrating en masse to the category of "experience goods" which have to be used before you can tell whether they are what you are looking for. Take the mobile telephone. All its features and specifications are described in the bulky instruction booklet, but they vary so much that it is simpler just to buy the telephone and work them out through use. We need not go into this too deeply, but merely note

that a key peculiarity of the New Economy is a lack of transparency, a lack of clarity as to the quality of goods, and this result from their sheer numbers and complexity. This leads to “information asymmetry” between what manufacturers know and what consumers can tell, and to distortions of the market when the purchaser is misled. In theory a customer could work out the reality of the situation in each individual case, but he simply hasn’t the time to do that for everything. George Akerlof has shown that if the consumer cannot accurately assess the quality of a product, a tendency to “adverse selection” results in inferior goods and services crowding out those which are better. This has brought about a change in how firms compete in the market. They do their utmost to differentiate their wares, to become monopolists in a specific sub-species of a product. In the process the difference is sometimes no more than using a different label and charging a different price. Differentiating everything from everything else makes it possible to avoid having to compete in one large market championship and instead to rule supreme in some cosy niche, thus moving towards the “monopolistic competition” described by Edward Chamberlin.

The next feature of the New Economy is that the price of goods increasingly reflects a personal, situational value refracted through the perception of other people rather than some universal value. This is a consequence of the fact that consumption increasingly resembles collecting. We are talking here not about the collecting of old-fashioned knick-knacks, but a practice embraced by everybody who seeks to position themselves in society by visually presenting facets of their personality. In this game a particular purchase, in the context of a lifestyle, is of interest mainly as the culmination of a series of declaratory purchases which aim to project a desired image.

Without this last purchase, everything previously acquired might be of little value, but it acts rather like that particular condiment which transforms just food into a signature dish. This is why when we are looking at consumption characteristic of the middle and upper storeys of Abraham Maslow’s pyramid of needs (where someone’s greatest need is for recognition, self-assertion and revelation of their personality), Heinrich Gossen’s law of diminishing marginal utility, which is a fundamental of economics, no longer operates. This law points out that each successive portion of a good is less valuable than the one preceding it. It is valid for homogeneous goods in short supply, the need for which is dictated by biological necessity, but it holds no sway in the New Economy because there goods are neither homogeneous nor in short supply. Economists of the past, in particular Wiener, knew of exceptions to Gossen’s law and pointed out that goods with network or group effects, like telephones or fashion clothing, had paradoxically increasing utility because their value is tied to the number of users. In the past these really were exceptions, but today network and group effects predominate. Neither does Gossen’s law hold for consumption linked to such personal investments as listening to music or creative growth generally, as Gary Becker has pointed out. It might seem that, taking the unit of consumption as being not a single purchase but the collection in its entirety, the law of diminishing marginal utility would again operate, but this view too is untenable because collections are never definitive and there is an endless variety of communities in which they can be displayed.

This is the essential nature and the driver of present-day consumerism. A bought item supplements an existing collection but never finally completes it. In itself it may not be expensive, but the increase in value which it brings to the set is disproportionately large. Anticipating that future gain, the consumer is more tractable, a fact of which the seller is well aware, allowing the price to walk on a long leash. A designer accessory whose factory price is little more than \$10 may be put on the shelf with a three-digit price tag. This “scissors effect,” where the cost of manufacture diverges wildly from the retail price, is exposed when the price can be slashed during sales. That is the norm in the New Economy.

The distinctive features of the New Economy are a response to fundamental changes in the traditional economy and, of course, in technology. The time structure of our lives is changing, as are the things we do and the length of time we do them for. The number of hours you have to work to satisfy life’s basic requirements is decreasing, so one would expect leisure time to increase. This does not always occur, of course, because people may prefer to work more in order to clamber up the social ladder. Nevertheless, the increase in leisure time is very large, not a matter of mere percentage points. In the second place, the quality of work time is changing, perhaps for the better, perhaps not. From a burdensome chore, work may be transformed into personal self-assertion and inspired creativity. On the other hand, it may remain monotonous and tedious and blunt the acuity of the person doing it. Liberation from the rigours of the workplace does not automatically ensure a happy life for the peoples of the world, and even if matters do improve, there is no guarantee that this will be perceived. Finally, the quality of leisure changes, and here too there is no guarantee that it changes for the better when we are less busy. The industrialisation and standardisation of recreation lower its value and attractiveness. For all that, these changes have in common a tendency for the quality of an individual’s personal time to rise.

High-quality personal time is time which people themselves rate as having been well spent. A prerequisite is for the individual to have freedom to choose and to use all his abilities to the full. The mission of the New Economy is to bring humanity closer to that ideal.

The concept of quality time is central to this book and it is worth now considering ideas of progress. The ideal of progress has so often led to disappointment, has become so encrusted with connotations of war and global tragedy, that people seem to have quite given up on it. Nevertheless, progress never went away, it was still there, only doubts were ever-increasing as to whether it was actually a blessing. I believe progress can be rehabilitated if we understand it to mean increasing people’s quality time. We shall discuss this in Chap. 3.

Economists are in a difficult, even a ticklish situation. The realities of the New Economy are suffused with the symbolic, yet traditional economists continue to operate with material, earthbound bean counting, paying scant attention to the “semiosphere,” the changes in people’s motivations and the structure of their values. Yet the trends in these areas are so powerful that before you know it they will demolish traditional notions of society, and perhaps society itself. Culture

influences the economy, but in the process is increasingly subject to the laws of economics. One might imagine that languages, symbols and signs are born and live in accordance with rules which have little in common with the material economy, and at one time that was true. But even as we watch they are going the same way as air and water, which are beginning to be scarce. They have moved from the category of free goods to the category of economic goods in short supply.

What is it in this subtle, incorporeal matter that has become a resource? On the one hand, it is the signs, works, linguistic and other symbolic constructions themselves. It is increasingly difficult to find a title for something, for example a website, without discovering to your dismay that the combination of letters you fancy has already been appropriated by somebody else. Words and names have become commodities in the most literal sense. They have to be bought for cash from cyber-squatters. That might seem an insignificant symptom, but far more telling is the fact that Google's search system really took off only when they found a way of selling, believe it or not, words. A business pays Google for a word or combination of words, and is thereby enabled to advertise through the search system. In response to users' enquiries containing the relevant words, the business's advertisement appears on the pages of search results.

Far more conspicuously than the accumulation of signs, another problem is becoming evident: the limited nature of such human resources as leisure, attention, memory, emotions and taste. The media and entertainment industries ramp up their offerings but encounter a shortage of eyes and ears. Advertising markets calculate the monetary equivalent of attention, how much a unit of time of a particular social stratum is worth at a particular hour of the day on a particular advertising platform. Production of the symbolic has always been an economic process, if with special features, but now consumption of the symbolic has also become an economic process. Not only people and businesses, but states compete for cultural territory. Take, for example, the battle over which language should be used for encoding the contents of national libraries. Google favours English, while France champions French.

There is another problem, with which possibly we should start since it presents a major challenge to the whole of the theory and practice of economics. Traditionally economics has busied itself with scarcity, distributing resources in short supply in accordance with certain criteria. When dealing with material production, the focus on scarcity makes sense, but to a large extent the New Economy is dealing with non-material products, and thanks to digital technologies the cost of producing them falls virtually to zero. Under these circumstances it is difficult to give scarcity such a central role. What scarcity is there in an electronic file? The carpet is pulled from under the feet of classical economics, although in fact scarcity has not gone away. It has decamped from the phase of production to the phase of consumption, and is ultimately bound up with the receptive capacity of man. If we are to engage seriously with the New Economy, economics has no option but to create a counting system for anthropological resources. An institutional innovation described in this book helps us to find the solution.

2.2 Consumption as Language or, Why Does Society Need Diversity?

The New Economy is an economy of groups whose purpose is to satisfy a person's need for quality communication. This understanding of the current situation is fundamental to all the ideas and thoughts put forward in the present volume. A particular individual's quality of life depends on the kind of people he has around him and on the nature of his interaction with them. It is good to have access to circles in which you (a) acquire necessary contacts, (b) enjoy good standing, and (c) find common interests and a suitable field for activity. This is the area in which the New Economy operates, organising and providing content for groups, communities, and communication clubs. The group is the key unit of consumer society, its end and its means. The entire system of signs, texts and signals is, on the one hand, a means of gaining admission to groups in which a certain kind of person is welcome and another is not; and, on the other hand, it is an information menu for consumption there.

The quality of a group is related to the size and balance of its membership. The group should have neither too many nor too few members. An optimal size will emerge which can be sustained. The information economy and its industries works to produce signs and texts which make possible the successful formation of groups. Dress code at social events is a simple and effective means of regulating who comes in. Something similar, in a more or less sophisticated and veiled way, applies to all groups. Anybody who has not made the effort to learn the conventions or who does not know the passwords (which may be knowledge of particular texts and coded terms) is excluded. The need for visual signals, which can be read instantly and make it possible to stratify society, is what drives the fashion industries. Accessories perform the same function: mobile phones, gadgets, cars and other possessions.

These categories are very eloquent and announce the status and style of consumption you have achieved: how you dress, where your children go to school, what kind of car you drive, what kind of house you live in, how many languages you speak, and the like. All the components of the collection are balanced in terms of price and, more subtly, taste. If one link in the chain is altered, for example, if you take a step up the ladder, all the other links need to follow if a person is not to create an unfavourable impression. If you move up to a more prestigious car, you need to change the kind of clothes you wear.

What sort of nonsense is this, you may ask. Why should a serious person care what kind of superficial impression he creates. If he is a model, fair enough, but otherwise why give a damn about people who judge him by the clothes he wears? It will hardly affect the opinion of people who matter. We will not dwell on this error but confine ourselves to suggesting that the strategy of jackets with holes in the elbows is an alternative form of demonstrative consumption, only with a negative sign. It works to some extent for a very small group of people (for example, eccentric professors) who, as luck would have it, are the people who articulate the principle for everybody else.

The habitus we show the outside world is a public photograph of our social status which, to some degree, also characterises our inner world. Like a bird's plumage it allows a rapid initial filtering of individuals on whom it is not worth wasting time. It makes sense to subject those remaining to closer scrutiny, to listen to what they have to say, what they think, what they have read, how they live their lives. Accordingly, sophisticated consumption is not a whim or a sign of moral depravity, but a rational means of stratifying and dividing to create communities. Every time a person selects and purchases an item, he decides where and in what respects he wants to resemble people who interest him, and in what respects he wishes to differentiate himself from them in order to demonstrate his individuality. He needs to integrate in order to be accepted as an equal, but also to differentiate himself in order to be recognised as an interesting person and to occupy a condign position in the group. Integrating and differentiating oneself are the principal axes of the coordinates of social life, enabling people to position themselves through consumer choice. By demonstrating his taste and talents, each person in society minimises personal costs of time, attention and emotion to establish quality links. Cognitive markers help to minimise communication with unsuitable, "wrong" people. The industries of the New Economy thus produce not mere goods with utilitarian qualities, but primarily a system of signs and signals essential for the ordering of personal life, acquisition of professional contacts, and discovering proximate and less closely related groups. A person needs to belong not just to one group but to several, and on different levels, depending on the diversity of his interests and the facets of his personality. If we reduce the variety of goods, there will be fewer differentiated groups and their membership will be less compatible. People will get on each other's nerves.

2.2.1 The Ethics of Consumer Society

Before we conclude this whirlwind tour of the New Economy, we need to look at the ethical aspect of what is taking place. We all live in the world of the New Economy and consume its goods. Whether we are living well or badly depends on each person's circumstances, and these are by no means invariably determined by the economy. Nevertheless, many thoughtful people are instinctively opposed to the New Economy. The place of ostentatious consumption in the prevailing lifestyle grates with them, the lack of respect for the utility of goods and, by implication, for the labour which went into making them, the escalating inequality when some are wallowing in luxury while others can barely make ends meet, and the former couldn't care less, and much else besides. At the risk of inviting opprobrium, we will allow ourselves a few words in praise of the New Economy.

The consumer society does indeed indulge the whims of its relatively successful members. They do devote considerable energy to swallowing up and destroying. Most analysts use the word "consumerism" disparagingly and can see no merit in it. But let us take a different look at the situation, perhaps through the eyes of Bataille

who writes of the “accursed share” which has to be destroyed in order to be able to produce more. Rising productivity of labour has freed time which needs somehow to be utilised. The problem of keeping usefully employed in the leisure era has become so acute that the classic Russian question, “What is to be done?” has taken on a new resonance: what is to be done not in the usual sense of “How do we get out of this pickle?” but “How do we keep ourselves occupied?” It is more and more difficult for people to find a productive use for themselves, especially in the technical, engineer’s, progressivist sense in which that was previously understood. If work is not dictated by the necessity of earning one’s daily bread and a person still feels a need to do something useful, they have to try to think up something to do. In contrast with the previous naturalness of life, this is what is found most exasperating of all: the artificiality, the laboured nature of what is going on.

The New Economy is called an economy of desires, in contrast to the economy galvanised by necessity. That word “desires” tends to be pronounced with a negative inflection, a degree of contempt, as if one is speaking about something primitive and depraved of which one should be ashamed and certainly should not be indulging. If in the past there were grounds for that kind of attitude, today desires deserve to be treated with more respect. The concern is not how society will feed itself, but how it will motivate and busy itself in order not to turn sour. The New Economy is an answer to the problem of motivation and engagement. It was, if you like, invented as an answer to this problem, as a method of utilising activity unproductively, activity liberated from the restricted economy. From a humane viewpoint everything seems fine: the New Economy gives people freedom to do what they want, to communicate with whoever they want and about whatever they want. Humanity has long dreamed of being free, and does not that mean freedom to choose goods and services, lifestyle, how we spend our time, and to join associations which accord with our interests? To put it simply, the right to work and play as we please (although freedom of this kind comes at a price, and you have to pay to belong to the association which interests you). You would suppose that people would have been delighted to enjoy this kind of freedom, and yet the majority spend their time nit-picking and exaggerating the drawbacks. Their praise had been for freedom in the abstract, without understanding its implications, and in their hearts people cannot bear the reality. It has to be said, though, that in the past today’s critics were largely paying lip-service to social rhetoric.

Suppose we concede that the consumer really is spoiled, falls far short of the standards of progressive mankind, acts to the detriment of the environment and those around him. His freedom as a consumer is nevertheless also the freedom of a producer! The new markets have performed a miracle by finding work for everyone (or almost everyone) at the same time as entertaining them. Production and consumption are meshed as intimately as two cogwheels. Stop one and you stop the other. Say no to consumption and at the far ends of the earth some luckless fellow for whom we all express much demonstrative concern will lose his job. If we proscribe the predilection of one group of individuals for expensive watches, Hermes bags, cosmetic procedures and similar excesses, we deprive another far more numerous group of jobs. Fulminating against inequalities in the standard of

living, we risk breaking the tow rope by which the leaders draw the laggards. We are full of sympathy but do not ourselves know how to compel the rich to share with the poor, unless by force. Critics of the consumer society pretend they have at the ready some other method for the benign redistribution of wealth. Yet the disparaged hyperconsumption is a kind of charity, if in disguise. Where, we need to ask, do those 4/5 of the retail price go which are paid above the factory cost for all manner of baubles and indulgences? Designers, craftsmen and apprentices of every description, service and commercial staff and a horde of creative and working people are fed through this means by the well-off.

The backlash against consumption results from a failure to understand how the new reality operates, and in particular an underestimate of its driving force, human desires. Motivation is a resource which needs to be treated gently. If we disrupt the active part of society's favourite game of stratification, for which money is required, then we may well find these people lose interest in earning money. And that will be bad news for everyone. We will very quickly find out why apparently needless variety is in fact needed. The downturn would not be long in coming. The factory of desires would close and everything would be blown away.

Consumer variety is not a sop but the central nerve of social development. The supply of new goods and the demand for them are crucial processes in today's world. The former enhances the quality of work, and the latter the quality of leisure. People would have nothing to do and life would be very boring if new things were not produced and consumed. For some reason people forget about the reverse side of consumption, work. For a time crises put everything back in perspective, as occurred in 2008. Many who were obliged then to wind down felt keenly how important work is for happiness, and how burdensome the gaps in time are when you don't know what to fill them with. You would imagine that was just the moment to get down to all those things you had been putting off: self-improvement, fitness, children... but you can't be bothered. Work and leisure are like interconnecting vessels: if the level of satisfaction falls in one, the level will fall in the other too.

There are of course solid grounds for giving present-day culture a kicking. Under the influence of commerce the cultural landscape is becoming dull and faded. A complex, intelligent text loses its public and you can't earn a living from it. Creative people adapt themselves to mass demand and subordinate themselves to manufacturers. It would not be difficult to list quite a few dangerous symptoms and distortions which arise as a result of commercialisation and adverse selection of culture. No amount of lamentation and entreaty will deflect the cultural process from the highway along which the popular masses are pushing it, having now discovered how much more gratifying it is to be a creator yourself, rather than merely appreciating the works of other artists, even if they are more skilled.

Industry has gone along with this trend, which it find profitable, levelling down qualification. Electronic sound enables non-professionals to compose music, computer graphics initiate them into design, the blogosphere has made every Tom, Dick and Harriette a writer, and a digital camera has made them a photo- or video-chronicler, if not quite a director. Such a complete move away from being a

spectator to amateur creativity is not without consequences, which upset those who cherished the old ways, but this is no excuse for ignoring its major achievement. As we have said, and will yet repeat, the New Economy generates a language, a semiotic system which is essential for high-quality communications, and the latter is the main prerequisite of happiness.

2.3 The Imperative of Conspicuous Consumption

The processes which are perversely interpreted as bad taste, shopaholism and exhibitionism are by no means reducible to that, as the economist Thorsten Veblen made clear a century ago. He spotted that the leisured classes were consuming not goods, but the price of goods, and more precisely its effect on those around them. According to Veblen, what really mattered was not a good's utility but the signal it gave out about the amount paid for it. That is pure information economics logic! Veblen, brought up in the traditions of conspicuous frugality, had little liking for the rich and this comes through in his writings. He had an intellectual understanding of the meaning of conspicuous consumption, but was personally nauseated by it. What hope is there, then, for those who reject cultural trends without having even a theoretical grasp of how the consumer society is arranged?

Expenditure for display has been around from the earliest times, and it is as naive to see it as no more than vacuous strutting as it is to deny the meaningfulness of any other persistent social practice. Leaders of all descriptions, prospering merchants and factory owners, the military and lawyers have all from time to time had recourse to non-functional expenditure. They were not indulging their caprices but acting entirely soberly, creating an impression they needed for their work with the aid of an entourage and, where necessary, expansive gestures.

There is an ulterior motive when a person buys some exotic foreign frippery and dresses his life's companion in it, and there is good reason why he decides to throw a banquet. Through gestures such as these he gains a reputation, and what is the problem if in the process some modicum of satisfaction comes his way too? Those around are persuaded that it will not be easy for him to part with his reputation and this is precisely what he is seeking: a public insurance against the possibility that in the future he might behave in an unseemly manner. The demonstrative expenditure works as a pledge of predictability and a foundation for trust on the part of potential partners. Incidentally, image advertising is also based on the logic of a pledge: anybody whose output of goods is not guaranteed to be of high quality is hardly going to spend a lot of money publicising them. After all, if a rubbish product is made recognisable, it is likely to be more rather than less difficult to sell. Purchasers interpret this signal at a subconscious level. Such is the fundamental logic of expenditure as propitiation. It only seems unnecessary. In fact, it is an investment in information about the future, in trust. It is surprising how little this mechanism is understood, given that it largely governs the behaviour of human beings in general and trade in particular. We should mention here work in the 1960s to 1980s on the

information economy, particularly by Michael Spence, and on game theory by Thomas Shelling and Robert Aumann, although knowledge of their work has not yet made it outside a narrow circle of specialists.

Status expenditure is almost an imperative for an overwhelming majority of members of society. It gives a very precise indication of who is who and whether a person is worth paying attention to. The logic of status has been around for a long time, but in the past was most noticeable among the upper crust of society. It caused expensive clothes to be made for the elite, jewellery, accessories, items of interior decor, and was a driver of the economy. Less elaborate items were targeted at the middle strata, while those in the lower ranks of society simply could not afford variety. The class diktat in respect of clothing was needed for purposes which today are achieved more easily, – to make it immediately evident who was who. Since Veblen's time the economic yoke has become less onerous and the game of conspicuous consumption can now be played by all. What is involved is no longer just property-owning status but multiple characterisations of personality. All strata of society are drawn at their own level into the production and reading of the same codes and semiotic crosswords as the well-heeled.

Every level of aspiration has its minimum of consumption. From the most mass produced and cheapest products, beer and chips and football, to music, internet surfing, movies and computer games, everything is done to make it possible to find things to do with available time and to escape its intolerable slowness. Those seeking promotion to a higher league have every opportunity, it is entirely up to the individual. In this we see a humane levelling of opportunity and a satisfying of all types of demand, tastes and ambitions by consumer culture. The system artfully brings people together or differentiates them, as a result of which the various classes, layers, strata, circles and segments of society are delicately accommodated and less likely to cause serious injury to each other with their sharp elbows. That is why being snooty about somebody else's popcorn, for example, is to fail to recognise that it is enabling you to distinguish your kind of people from the rest (or to make a big thing of your knowledgeability).

We have reached a point where contemporary society is increasingly managed by a rational symbolic code no less powerful than competition for material resources. This engenders different realities and a different morality to go with them which it would be mistaken to judge from the old standpoint. Below we analyse how this mechanism of the information economy operates.

2.4 Personal Thoughts

Human beings can do all sorts of things with information, creating innumerable texts and performing myriad operations with them. The internet has revolutionised this field, providing instant links between people and access to any text. Despite these achievements, there is still only an extremely weak demand for the information each of us creates. Nobody has ever really known what to do with the opinion of the

ordinary private individual, and this despite the fact that every homo sapiens possesses a sliver of valuable knowledge which he is constantly accumulating and updating. He remembers and interprets what he has seen, heard and experienced, and formulates an attitude towards it. In this way each person is ceaselessly creating information, but inexcusably little effort is made to use this resource for the common good. It is as neglected as the energy of the wind or of waterfalls. Let's face it, there are many situations where it would do no harm to know what rank-and-file citizens think, or know, or believe to be fair, rather than taking account only of the views of the top echelons of society. We see the main advantage of a market economy as being the way it is able to use knowledge dispersed through society. Each participant in the market possesses information known only to him about his opportunities and needs. The market already stimulates the use of some of this knowledge, coordinating the actions of agents by means of prices and competition. Where it fails however, is in using laborious, outdated methods to mine extremely limited quantities of knowledge from enormous seams of information about people's lives, their judgements, intentions and assessments.

If someone is not a public figure, the lion's share of the information they create is lost without trace. We may try to salve our conscience by taking the view that this subjective, inaccurate, badly expressed, unusable information deserves nothing better. "You cannot make a silk purse out of a sow's ear," we warn, implying that 100 rank-and-file judgements are no match for one professional judgement. Sometimes, however, there can be strength in numbers and ubiquity, sometimes in speed of reaction (as when events are reported instantly by eyewitnesses in a way no newspaper can hope to match), and the information is presented in accessible, folksy language, liberated and unblinkered. We can be sure that there is a substantial benefit waiting if society can only mobilise the resources tucked away in each one of us. In this book collaborative filtering is shown to be inscribed on the banner of the New Economy because it is key to resolving this task. It appears to be an unparalleled technology for extracting a valuable product from the husk of what ordinary people have to say. It finds value in raw material which has been neglected because nobody knew how to use it. The resulting information product is far more useful than anything we currently have in the form of ratings, charts, and other summaries. In the course of the statistical averaging out to reduce these vernacular voices to overall ratings, all that is personal vanishes into a common grave. Crucial information is irrevocably lost and we are not upset in the slightest because of our ignorance. Collaborative filtering enables us to identify and satisfy a demand for subjective information. The source of the information, obviously, is individuals, but for some reason up till now nobody has thought how to process or make use of the data. The moment the use of subjective information is recognised, there will be an incentive to collect it, structure it and exploit it.

Let us take as our point of departure the shortcomings typical of current ways of processing personal judgements or consumer reactions. We don't, for example, know whose opinion ratings reflect. An average rating is useful for a producer or the mass consumer, but it is a very approximate guide for anyone whose tastes deviate from some standard statistical mean. For them a rating will invariably be too high or

too low in relation to their own quirky opinion on whatever is the matter in hand. Take the UK's weekly "Top Twenty" pop songs. It is entirely probable that you will not find a single song there which speaks to you. This is typical of any chart based on statistics of sales to anyone from conservative professors to iPod addicts (with a natural bias in favour of the latter). In order to personalise the rating we need a method of filtering the judgements of people who differ from each other. We need the ability to identify who is similar and deliver to them personally the opinions of people who think the way they do. It might be, for example, that out of a million cinemagoers a movie has been seen through our eyes by only 500 people. What that 0.05% of the audience thought is what we are most likely to be interested in.

The most important aspect of the collaborative mechanism is its ability to identify groups of like-minded people. At the heart of the software's algorithm is the hypothesis that coincidence in the present can be predicted from coincidence in the past. Unlike anything done previously, grouping takes place not through psychological tests or socio-demographic data (although these may contribute), but on the basis of a directly expressed attitude to particular consumed objects, events or texts.

If two people have read a certain number of the same books (watched the same movies, listened to the same songs) and have rated them similarly, then in certain respects their views are close. This should make it useful for them to exchange opinions about items with which one is already familiar and the other not. Such is the (un)complicated heuristics on which the collaborative method is based. In order to obtain recommendations, a person must first rate a number of items (several dozen, or preferably several hundred) to create his preference profile or "taste pattern." The system compares the profiles of different people and identifies those who are similar. The logic of collaborative filtering is simple, but in practice highly complex algorithms are used in this computation. There are different approaches even to something as fundamental as defining measures of proximity. In a group of like thinkers there will be those who have seen, read, or experienced something as yet unfamiliar to their "taste neighbours." On the basis of the ratings given by the former a prediction is computed for the latter. On another occasion recipients and donors of information may change places. If opinions are processed on many items and areas of consumption – literature, cinema, music, brands and other sectors, including fringe cultural and totally utilitarian items (which it is almost impossible to find nowadays in consumer markets), one can reliably identify common ground between people and use it to compute predictions and personal recommendations. For practical purposes it is essential: (1) to collect a large number of ratings from a large number of people; (2) to form a reference group for each of them consisting of people with proximate opinions/ratings; (3) to synthesise the predictions; (4) to make the result known, on request, to the taste neighbours individually. All this is currently being done on recommendation sites constructed on the basis of collaborative filtering.

As is often the case, it is more difficult to formulate a problem than to solve it. As soon as the potential demand for subjective information is recognised, we may consider the job half done. While everything after that is no small matter, it is only

technology. Recognising how to deal with subjective experience is a fundamental discovery, more far-reaching than the actual invention and elaboration of the collaborative technology which enables us to mobilise the information resources tucked away inside us.

The consumers of subjective information are essentially the same group members who are the main players in the New Economy. Somebody's personal opinion is of interest to those whose tastes, outlook and interests are close to theirs. If a person discovers something of value, it makes sense for him to bring it to the notice of like-thinkers and then, when the time comes, they will share their discoveries with him. The issue of the objective quality of information (commonly understood to be its accuracy, originality and completeness) becomes less important. Information may be objective but not hot, uninteresting, incomprehensible, superfluous and, as a result, unwanted. In the resolving of a whole range of problems, subjective criteria prove far more important, linked to tastes, interests, and background. The need is to identify groups of like-minded people on an industrial scale and enable them to exchange subjectively significant information derived from consumer experience. Only 10 years or so ago it seemed doubtful whether the processing power of computers could be up to conducting such highly intensive calculations, but today that is not an issue.

Collaborative filtering comes under the broader category of "crowdsourcing," a term introduced by *Wired* which covers the exploitation of collective intelligence and the work of volunteers for various useful purposes, including commercial purposes. Crowdsourcing is used for identifying criminals, deciphering voice recordings, and translating texts. The company TxtEagle, for example, engaged activists in Kenya to translate the instructions for Nokia telephones from English into approximately 60 local languages. Another first which made the news was the online translation of the seventh volume of Harry Potter which Chinese, Brazilian and Russian volunteers undertook for their readers.

A crowd can be mobilised to resolve not only technical but even creative tasks. Here reliance is on brainstorming to produce a far greater diversity of approaches than is likely when making conventional use of permanent staff. Procter and Gamble, for example, advertises on its website the problems it wants solved and invites an army of 100,000 volunteers to rack their brains. The successful are rewarded financially. Other well known forms of crowdsourcing are programming projects with open source code like Linux, MySQL, or the Firefox browser. The same principle is exploited in Wikipedia. Internet surfers may find themselves participating in crowdsourcing projects without intending or wishing to do so. When visiting sites each of us is supporting the work of search algorithms. These voluntary or involuntary groupings working for the common good have been around for some time. With the enhancement of communications, however, their importance increases vastly. For crowdsourcing an organiser is required to formulate the task and recruit people to work on it. An information system is needed to enable those undertaking the task to select their small part and present the results, and subsequently to enable each user to enjoy the fruits of the work they have jointly performed. Sceptics argue that this is "anthill technology,"

incapable of major achievements. They claim it has a low ceiling, and in that there is a grain of truth. James Surowiecki in *Wisdom of the Crowds* gives examples of how crowds fail to cope with tasks or reach erroneous conclusions. For all that, he considers them capable of many things. Clearly, you cannot be 100% sure you can create a wise crowd to order. Nevertheless, rather than rubbish the concept, it is worth trying to nudge professionals in the direction of setting tasks which will allow the crowd to show its strengths, and also of coordinating efforts and selecting ideas.

Sometimes crowdsourcing is defined very inclusively, and then much can be brought under the heading, even the working out of norms of socially acceptable behaviour or the status system. Collaborative filtering too can be seen as an example of crowdsourcing, since on Web 2.0 and Web 3.0 sites content is created by users themselves and dispersed, non-specialised labour resources are being put to use. The armoury of the Third Web, which is a combination of user-generated and user-certified content, is something to which business firms turn, mainly at present to decide which particular products they should concentrate on. For example, Threadless, a Chicago company manufacturing T-shirts, reduced the design process to an online competition in which enthusiasts provided the creative input and themselves voted on which designs were best. These were then put into production. The designers receive premiums and prizes, but most important is the opportunity of seeing their work being worn by the public. This technique is considered a pioneering example of crowdsourcing. The Japanese company Muji designs furniture in a similar manner, but with the refinement that ideas captured over the internet are further worked on by professional designers.

It is entirely justifiable to see collaborative filtering as a variety of crowdsourcing, although its scope and importance are greater, because crowdsourcing is primarily applied to specific problems, whereas consumer rating of quality is a universal approach to exploiting the web community's information resources. Collaborative filtering is hi-tech and, crucially, requires neither moderating nor manual finishing, which is one of the drawbacks of crowdsourcing. The collaborative mechanism makes it possible to derive maximum value from the crowd's ability to gather and process information. In doing so, people are engaged in areas where they have strength and are enjoying themselves, explaining their own ratings and opinions. They are both the creators and end users of an information product.

We have here a new way of exchanging information. Oddly enough, with the exception of anthropologists studying primitive societies, nobody asks why people exchange information at all. Perhaps it just seems too obvious. Socialising is so natural that there seems no need to seek a motivation for it. Yury Lotman's school of semiotics, founded in Tartu, Estonia in the 1960s, did not address this topic either. In fact, the motivation of contemporary interpersonal communication is of fundamental importance. It is a mistake to neglect it. We have only to replace the question "Why?" with "What for?" for a whole new branch of economics to grow out of the answer: Symbolic Exchange Economics. In the course of communication, resources are expended and various outcomes are possible. People communicate because they benefit from communicating. It is pleasant and/or useful, now or in the

future. Whether that aim is achieved, however, and to what extent, is contingent on many factors. With whom are they communicating, about what, in what way, at what time? All of these are considerations which can be optimised. Socialising makes it possible to improve the quality of personal time and hence the quality of life. As we will see below, the concept of quality personal time is fundamental to the New Economy.

The points users award to objects in a collaborative system are in reality a rating of their personal subjective time, even if what they seem to be characterising is objects of consumption. The rating of objects by a consumer characterises the person making the rating no less than the object rated. If someone awards a rating of “excellent” to a movie, that signifies that he had a great time watching it. The database of ratings accumulating in a collaborative system is accordingly of value, apart from anything else, as a file of reports by a large number of people about the quality of their subjective time.

The idea of identifying unrecognised groups of like-minded individuals is nothing new and underlies many phenomena in life, as anybody becoming familiar with the collaborative principle will begin to see very clearly. Before a workable technology could be created on that basis, however, it was necessary to find an appropriate method of surveying people. An approach to digitising mental operations had also to be devised. When a way was found of harvesting subjective ratings numerically, it became possible to computerise the process. The first approach to working collectively with information was introduced by the Xerox Corporation in 1992, where the practical task was to enable researchers to share information about salient books, articles or papers which any member of the group came upon. A few years later the idea was developed and provided the basis for recommendation services, of which the best-known today are Netflix (for the cinema) and Last.FM (for music). In Russia such sites are consolidated in Imhonet. Unlike the two Western resources which specialise in just one type of content, Imhonet issues recommendations in more than 20 fields, from literature to mobile telephones. Examples of how this portal works are used in the present book.

At first sight it might appear that collaborative filtering is an ingenious but limited technological toy. In fact, however, it is not just a handy technique but a fundamental principle for working with information, and it subsumes a great deal that is new and useful. We know of examples in history when some mixture of Bertholet’s salt redrew the map of the world, although this occurred not when it was first observed that it could explode but when a military application for the discovery was recognised. In early Christianity the appearance of the first hermits was seen initially as merely a form of lunacy, rather than as the beginning of monasteries on which the Church, and with it European civilisation, would come to rely. Collaborative filtering is a new way of forming groups, communication clubs, like-minded communities which in the era of the New Economy will become the building blocks of society. It is thanks to collaborative filtering that, for the first time in history, we understand what to do with the opinion of a single individual. A subjective statement is transformed into a product of value to members of a group which emerges simultaneously on the basis of such statements.

2.5 Evolution of the Second Invisible Hand

One of the great achievements of economic thought was discovering the principle of the “invisible hand” of the market. Using this metaphor, Adam Smith explained how markets, and with them vast areas of human activity, are regulated without any direct exchange of information between people, through prices and the balance of supply and demand. The way this operates is that the consumer sees different prices and chooses what is best and cheapest; the producer also sees prices and decides whether he can produce goods at a profit and what volume of them he will be able to sell. Competition favours the best at the cheapest price and society reaps the benefit. If too many goods are manufactured, demand slackens, the price falls, and production is scaled back. If there is a shortage, the price rises and production is increased until supply and demand are once more in balance. Nobody needs to arbitrarily command and control how much of what is produced. The invisible hand operates through the information system of prices, which activates market forces. Perhaps, since the main factor here is observing goods and prices, we might do better to talk of invisible eyes and ears rather than a hand. Until very recently nobody considered the possibility of any other kind of coordination, and that was entirely understandable because any direct exchange of information between people which extended beyond their immediate circle would have been freighted with prohibitively high costs.

The crucial change brought about by the information technology industry, electronic mail and search engines is that communication has become a great deal cheaper. Opportunities have appeared for the person-to-person exchange of information without any middlemen, and also for public exchange of information within the community where a comment can be transmitted not “in series” to one person after another but instantly, “in parallel,” to every online member of society. Since this direct exchange of information has taken off, to the famous invisible hand we can add a parallel mechanism which operates on observation not of prices but of who is buying what, for what reason, and to what effect.

This is a “second invisible hand.” It has in fact always existed, but has operated even more invisibly than the first, and outside the purview of economists. It is the system of status distinctions which has ruled the world since ancient times and which functions through observation of product diversity and the rate at which products are renewed, which is how the status and membership of a particular stratum of society is made public. We have seen that this is needed in order to provide oneself with the necessary contacts and access to the circles necessary for arranging one’s personal and public life. The interests which the second invisible hand coordinates are not material but are to do with relationships and communication. They affect the business sphere and the personal sphere. Accordingly, this invisible hand operates in both the economic and the symbolic field but, unlike the first hand, concerns the relationship not between goods and prices but between objects and individuals. Actions are prompted, not by standard-setting products and their prices, but by iconic personalities who are role models in one’s immediate or a more remote

environment. We strive to catch up with or to excel them in our own milieu, to be seen as equal or even superior to them.

The rules for climbing the symbolic social ladder are more complex than those for the financially based ladder. Product diversity is the means by which the second invisible hand orders this hierarchy and its groups, but these are based not only on property but also on categories of symbolic capital and taste. People choose items in accordance with their taste and what they can afford, and the signals their possessions transmit enable them to join in or distance themselves, and to compete with other people. They see some who are beneath them, others they consider their equals, and those to whose level they aspire. These higher and lower levels exist in parallel within the twin coordinates of money and culture. The money people have is rarely visible as such. It reveals itself only through objects. How well off a person is, is usually judged mainly by his visible possessions, but these tell us about more than wealth. They simultaneously denote taste, mentality, social status and other attributes. If the first hand regulates through the availability of goods and services, the second holds sway over groups and relationships, but its invisible operation is made visible by those same goods. The first hand operates through producers reacting to demand, while the second acts through consumers who demand particular goods they need for denoting their differences.

In the sphere in which the second hand is acting, competition is regulated not by price but by more complex, compound signals. In every age society, as it searches for orderliness, needs to be able to produce a seam of differences between individuals which it can present and detect, a process which develops in accordance with the laws of information economics. Whether to make contact with a person or not is a decision always taken within certain time constraints. No matter how desperately you may need information about a potential acquaintance, you have to make do with what you can gather in the time available. Given unlimited time you could, if you so wished, find out pretty much everything about the person you are interested in, but is it worth it? As Herbert Simon, one of the fathers of information economics, put it, a search continues until its costs outweigh its anticipated benefits. In accordance with the saying, “the best is the enemy of the good,” a person stops when he reaches what is acceptable.

Consumer society provides a signalling system and practices which enable people either to draw closer or to distance themselves. The effectiveness of the system depends on its speed, how much work it involves, and how complete the mutual “transparency” is which it provides. This affects the quality of the environment in which people live, the quality of their communications, and ultimately the quality of their life.

While a section of society is busy creating and deciphering ever more ingenious codes of stratification, the gatecrashers are not idle. There is a kind of arms race which ensures that, if a visible or invisible club becomes overfull after invasion by unwelcome visitors, the core members will refurbish its entry codes in order to return their ability to recognise each other and partition off a new club accessible only to their elite. This is most evident in fashion, where innovations are introduced rapidly in order to make sure that the non-elite majority cannot keep up. The system of

ciphers accordingly becomes more complex at an accelerating rate. Thanks to the internet and its blogosphere, extremely private aspects of the personality are exposed to public view. Communication has evolved from the crude Veblen signals to a subtle system of visual imagery and is well on the way to the next stage – unpacking the interior baggage of individuals. Here there await us the most interesting secrets: preferences, educational background, interests and enthusiasms, and attitudes to all sorts of events. Little of this can be readily imitated by spending money.

In considering the internet as a catalyst for the operating of the second invisible hand, let us not forget that ultra-high-speed correspondence is not by any means all we need for effective communication. The fact that sending messages has become easier has brought about not a decrease but an increase in the costs of shovelling through piles of emails. Ever speedier communication does not necessarily make rational choice less onerous. The benefits of being able to obtain information more easily can be nullified by the increase in its quantity and the number of attempts needed, and at this point limitations make themselves felt which fall into the province of attention economics. The solution needs to be sought in automating the sorting of texts in accordance with personal requirements.

2.6 The Economic Sense of Collaborative Filtering: Division of Labour in the Testing of Experience Goods

The world of the New Economy has an abundance of goods whose consumer qualities are difficult to assess in advance from the manufacturer's specifications. These are so-called experience goods, which have to be tried out. There is also a category of search goods which can be chosen from their description, but these too have almost entirely migrated into the camp of experience goods. A television might at first sight appear to be a search good, since you can check its specifications before buying it, but there may be several dozen of these parameters, making it difficult to summarise their value. Moreover, such important constituents of value as design, brand and price are not categorised as functional, utilitarian values. It is simpler just to try them out. This goes for many, if not most, present-day goods, which is perfectly natural in view of the diversity of models released on to the market. A car might seem the classic example of a search good, but these too are becoming an experience good. You climb into your new luxury off-roader only to find the suspension unacceptably hard. You cannot tell how smooth the ride is going to be from a brochure. That is why you need a test drive. In a whole range of cases, however, that kind of pre-purchase sampling is impossible because it would be tantamount to full consumption. Having experienced it, there would be no reason to buy.

The dilemma is that everything has to be experienced before you can tell whether the goods are suitable or not, and it is impossible to test everything. The solution is to seek the recommendations of people you trust and who have already experienced the wares you are interested in. People giving advice to each other is as

old as the hills, but collaborative filtering brings a fundamentally new quality to collective processing of information. Each person tries something out and, with the aid of collaborative algorithms, their individual experience goes into the collective money bank and frees many other people from needless testing and errors. This principle of division of the labour of testing is analogous to the way groups of geologists operate, dividing up a location into plots and subsequently sharing information in order not to duplicate work.

As an example, let us consider what this approach can do for the cultural industries. It is generally accepted that they suffer from a disproportion between the conveyor belt, production of output and the “manual” testing of quality by professional critics, who are drowning in floods of content and obliged to work beyond their credible capacity. Because they are overloaded, the quality-control filters become clogged, as can be seen if one takes a look at the movies most recently awarded Oscars. The reader or cinemagoer who tries to dispense with them is deluged with great quantities of unsorted trash. In order somehow to keep up with the increasing volume of output, experts proliferate beyond all reason, with the result that it is high time to give ratings to the critics themselves. There are hundreds of movie festivals, and an order of magnitude more literary prizes, with the result that they attract little attention and convey nothing useful to any significant number of people.

Collaborative technology makes it possible to mobilise an army of volunteers and restore the balance. No matter how fast content is generated, it is countered by a no less massive system of selection by the crowd. A galaxy of goods is balanced by myriad centres of critical evaluation. Commercial producers can spew on to the market as much third-rate rubbish as they like, disguising it with alluring covers, but the consumer community will unerringly reject all that is substandard. Unsaleable goods will be sent off to be pulped or shredded. Such is the collaborative antidote to adverse selection in culture.

As has been mentioned, collaborative filtering makes it possible not to average information out, not to melt it down in the furnace of general opinion, but to deliver it personally to individuals to whom it is going to be of interest. This is similar to how a fractionating column works in the petrochemical industry: at each level, in our case at the corresponding point on the scale of taste, the fraction of opinion is extracted which is appropriate for a particular user. It is possible to figure out a monetary equivalent for this added information in terms of increased efficiency in the consumption of culture by people who have made use of recommendations.

2.7 New Technologies, New Institutions

Like any major innovation, collaborative filtering brings many possible applications in its wake. New institutions and sub-institutions sprout up, new rules for life and living in society.

We have mentioned its use as an antidote to adverse selection. Collaborative filtering makes it possible to restore parity of knowledge between the consumer and producer in respect of the quality of goods, blocking the tendency to adverse selection which invariably appears where there is asymmetry of information.

In addition to the new institution of collective critical assessment by consumers, for the first time in history we have a full-blown system of feedback between the consumer and producer. In the past, markets contented themselves with feedback derived from sales statistics, but box-office takings tells us only how much people have paid, not how satisfied they were. The post-experience assessment of a product may differ markedly from what it was before the purchase. This is particularly applicable to goods infrequently consumed, or consumed only once, which today is the dominant pattern. With collaborative filtering, signals about quality are received from people who have already experienced the good and are not merely judging it from hearsay. Moreover, we are dealing now with the direct expression of consumers' views rather than some interpretation of their behaviour, like the number of clicks on an internet page displaying goods. (This is the information currently used in order not to annoy customers with endless surveys.) Never before has a producer been able to discover what a purchaser thinks about his goods as clearly and rapidly as he can on a recommendation site. Importantly, the customers themselves do not know each other's ratings. This provides a handicap for heavily advertised goods like movies, where the pioneer consumers are passively followed by all the others, taking their cue not from the impression the movie made (which is unknown), but from the mere fact that tickets were purchased. The phenomenon is known as a "non-informative information cascade" or, to put it more bluntly, following the herd.

Managing anything without feedback brings you up against almost insuperable difficulties. When feedback becomes available, it enables a fundamentally different approach in the social (non-commercial) sector, and in particular to cultural policy.

Let us, however, not run ahead of ourselves but move now to practical institutions and applications which flow directly from collaborative filtering and which have either been approved or are in the pipeline for the very near future.

2.7.1 Web 3.0

One such institution, which is already functioning, is the so-called Third Web. I put in that "so-called" because until recently something quite different was understood by the term, namely the "semantic web." The need for the semantic web made itself felt in connection with the extreme "noisiness" of the internet. It became necessary to find a method of automatically detecting the type and quality of texts, in order to save time when trying to select the best and most relevant of them. Many hopes are pinned on the semantic web, which is a computerised linguistic analysis of file content.

In my view, it is easier to open the treasure chest with a different key, namely collaborative filtering, where quality is being analysed by the users themselves. Although their opinions (ratings) are shamelessly subjective, they are addressed to

people for whom their value is their subjectivity. Subjective certification of quality is appropriate when addressed to subjective perceptions of quality.

Web 3.0, which is user generation and filtering of texts, is in my belief the way forward for the internet. In the previous phase, texts on the net were sought using search engines, but now the era has arrived of personalised, individual delivery of content. As a result, every user will be able to receive what is of interest to him personally. Web 3.0 is a kind of search engine which, in response to a user's search, provides a personalised selection of content. Web 3.0 is the next stage in evolution of the internet after Web 2.0.

Web 2.0 is user-generated texts and images. People keep personal diaries in which they write whatever they like, or present texts, photos, videos, or pass on other people's materials which they have liked. This is all laid out in minimally classified portions, with no ranking in terms of quality. It is not difficult to understand why Web 2.0 was a winner with creators of websites: it was a means of obtaining free content. People are reluctant to pay on the internet, but servers and other infrastructure need to be funded. If you have also to pay for creating content, supporting a site becomes expensive. Professional editing is an appreciable budget item. Accordingly, creators of websites moved to foraging, farming out the creation of content to users. In return the users receive a forum for socialising and expressing themselves. This would be fine, except that people can only write and photograph to the best of their ability, and one ends up literally scavenging a crumb at a time in the search for interesting content among all the amateur offerings and repetitive quotation. This is time-consuming and appreciably detracts from the satisfactoriness of the pastime. Web 2.0 is users' Do-It-Yourself in terms of content, with all the advantages and disadvantages associated with it.

Web 3.0 differs from Web 2.0 in that users not only search for or create content, but filter it themselves. From the viewpoint of the end user, it will not matter who generates or hosts content, users or professionals. It all grows out of the highly diverse spawning ground of culture: hundreds of thousands of songs a year, 250 decent movies, ten times as many purely commercial movies, millions of written texts, video blogs and postings. All this huge quantity of stuff will be certified and individually packaged by the community of a collaborative site as fractions in the column of taste.

Sorting by quality is important for content (and indeed all material output) of any kind. There is one sector, however, where the task is particularly urgent, and that is in the filtering of topical content. News, articles, essays, current analysis, interesting video and photos, blog entries, jokes etc. all have a short shelf-life, and more than any other content need to be packaged and delivered to their target audience rapidly. You will sooner or later hear about the movie which won the Cannes Film Festival and will have little difficulty seeing it any time. There are, of course, very good but little known movies which get shown at second or third rank festivals but which almost never go on general release. A recommendation service will help them to emerge from the shadows, but here too there is no great urgency. The situation is quite different for content which dates rapidly. This is where user filtering is particularly valuable, and the service supporting it is essential.

On such a collaborative filtering site people can post anything that has grabbed them: news, jokes, analysis, their own biography, cartoons etc., and the collaborative programme packages all this and issues it in accordance with users' preferences. Each participant receives a personalised selection containing all the things which people in his reference group (people whom the system has identified as taste neighbours, plus anyone the user has asked should be added to his list) have rated highly. The technology frees you from scouring the net and provides a selection of content which merits your attention. It is also suitable for packaging the periodical press, enabling readers with a single mouse click to receive a collection of the most relevant articles published in one or two dozen publications. Each person probably browses one, or at most two or three publications, which means that interesting articles will almost inevitably have been overlooked.

Some readers of the mass media may belong to the same group as a particular user and for them it is no big deal to flag up interesting articles which, thanks to collaborative filtering, then become a shared asset of the group. On the f1000biology.com website, for example, leading scientists annotate publications they consider deserving of attention. By doing so, by performing wholly routine actions and nothing extra, people jointly work up a pool of the best information materials for their joint use. It may well transpire that the most interesting communications do not arrive from sources readers have been accustomed to use. Web 3.0 technology thus makes it possible to raise one's game, working far more efficiently with media materials and specialist literature.

2.7.2 Smart Introductions, Meaningful Messages

Another innovation associated with collaborative filtering technology is advanced internet introductions. In itself this facility might not have a right to the grand title of an institution but for the enormous role which encounters and contacts play in human lives. On the internet, introduction services are ultra-popular, although it seems quite difficult to find friends through them and, judging by end results, time spent there is mostly time wasted. The process of searching, browsing through photographs, presenting yourself, flirting by email or chat, all goes according to the book until the moment of meeting in reality. People have rushed to make friends online, realising that the barriers which hinder intimacy are lowered there. Online undoubtedly does win out in terms of convenience and delicacy at the phase of coquettishness and checking each other out, but the advantages evaporate when you go off-line. Selection is through photographs and socio-demographics. People naturally try to show themselves in the best light, and allowance is made for this, but nevertheless the virtual and real images tend to be so different that most often the introduction leads nowhere, if we ignore one-off sexual encounters. The latter keep sites of this nature afloat. For so-called dating the service as it exists today would be fine if it had not been turned into a marketing medium for (semi-) professional services of an intimate nature.

Quite apart from online flirtation, which survives on the fantasies and boredom of some users and the sexual voracity of others, there is a need for friendships of a different kind. This includes the search for lifelong companions, and also the wish just to make the acquaintance of interesting new people. Such meetings of minds are, however, for the time being still arranged mainly in the old way, off-line. Shared journeys, entertainment, sport, education, the wish to discuss issues that matter to you with another person – for all this recommender technology might have been specially invented.

An example of the practical implementation of this idea is the Russian-language service “Smart Introductions” on the internet at <http://imhonet.ru/users/dating/>, where three filters are used to select potentially interesting people. The first is the standard socio-demographic one: sex, age, place of study and residence, marital situation, photograph, etc. This functionality is found nowadays on every profile site. The second filter, by shared interests, is also widely applied (for example on the “In Touch”/Vkontakte site) and will be helpful if someone is looking for tennis partners, fellow amateur photographers or karaoke enthusiasts. Finally, the third, collaborative, filter is entirely without analogy. People can use it to find partners for themselves whose tastes are close to theirs, not only in terms of culture but in any sphere where taste preferences play a role. It is one thing to be a fitness fanatic or to enjoy playing table football, but quite another to share that enthusiasm with people with whom you have a lot to talk about. All three filters function automatically with just a few clicks.

The choosing of like-minded people or taste neighbours is an essential but intermediate phase in collaborative filtering. On the Imhonet.ru site it has been turned into a freestanding end product. The programme recommends interesting people to users in just the same way it recommends works of art. As a bonus, there is nothing to stop you from taking a closer look at the person the system has selected. The automatic selection greatly reduces the number of “possibles,” after which it is time to resort to manual filtering. You can look through the full list of a person’s interests, the books he reads, the movies, brands, and wines he likes. If he looks promising you can read his blog, reviews and comments. Any friendship, platonic or romantic, is going to benefit from the opportunity to select in accordance with tastes and interests. Having found candidates for friendship from their photographs, the next step, for example, could be to filter for those who like Fyodor Tyutchev’s poetry.

2.8 The Gratuity Economy: Retrospective Payment and Group Motivation

Such tools as Web 3.0 and Smart Introductions give an idea of the basic potential of applied collaborative technology. In both cases all that is required is the recommender service itself, but one other far-reaching innovation is arriving

which fits very logically with collaborative filtering. This is a move to voluntary post factum payment. These two principles taken together provide the conditions for the appearance of a whole family of social institutions, all of them with links on the one hand to the group economy, and on the other to the gratuity economy. The gratuity economy involves economic exchanges which are unconventional in that goods and services are delivered without money but in the expectation that they will be paid for after being used. Moreover, the recompense is voluntary, that is, it is left entirely to the good judgement of the consumer. Such a radical departure from the traditional scheme of paying upfront will, no doubt, seem rather startling. Absurd, however, it is not, if we take cognisance of just how uncertain product quality has become. There is indeed a further question to be answered: are the goods even necessary or could one get by perfectly well without them?

There is a further argument in favour of post-factum payments. Bearing in mind the plentiful supply of practically everything, including producers, and the shrinking numbers of consumers, it is becoming unclear who should pay whom. Should listeners pay the songwriter for the days he has spent on his composition, or, on the contrary, should the songwriter pay the listeners for having motivated him to enjoy those days of inspiration and for having listened to the result? Symbolic communications are different in being reciprocal, mutually motivated, with equal input from the two sides. That is why it is so difficult to fit them into the framework of remunerative, impersonal, utilitarian contracts. A gratuity payment system is the future of the New Economy, the reverse of what is customary.

There is a further reason for moving to post-factum payments. In a number of areas the traditional mechanism of competition is failing. A typical example is the digital cultural industries where Adam Smith's invisible hand of the market has nothing to guide it, whether in terms of price or quantities of production. The content files all cost the same, and it is difficult to keep copying of them under control. Areas where there is no natural scarcity, which means the greater part of symbolic production, can only be fitted into the framework of conventional economics with the use of considerable force. This, specifically, is the role of copyright, which we will discuss below. With the development of digital technologies, some markets have arisen which, in certain respects, are soundly rooted in the conventional economy. In other respects, however, they hover weightlessly in realms where laws premised on a limited supply of goods simply do not apply. It is far from clear how a business should be run when its goods are effectively being circulated free. If people so wish, they can obtain them without having to pay for them. The natural reflex of the system is to pretend that nothing much has happened and to carry on following the old routine. With time, however, it becomes evident that forcible restraint not only demands constant pressure, but is also accompanied by negative effects (like any attempt to unite things which are incompatible).

Where the economic and the symbolic lack any genetic kinship, which primarily means in the area of scarcity, they stubbornly repel each other. Seeing the determination with which the state rushes to the defence of copyright, you recognise that it is, at least to some extent, trying to maintain the status quo in order to give the cultural industries time to adapt to the new realities. At the same

time, supporting the monopoly on culture of a number of major corporations unquestionably detracts from market efficiency.

If the economic nature of the product has radically changed, does it make sense to persist with the traditional scheme of exchange? If for objective reasons it is difficult to restrict and sell goods, may the solution not be to offer them on the basis of voluntary recompense? That is, to move systematically to post-factum payment or post-exchange recompense based on trust. In the abstract, the move is obvious, but of little value if no mechanism is proposed or conditions created to ensure that masses of people will indeed pay and that the revenues so collected will be sufficient to motivate conscientious producers. If such a mechanism can be created, we need have no further worries for the future of the gratuity economy.

The basic idea behind the new scheme is that people first consume a product, and then pay for it if they so choose. What producer is going to agree to take such a risk, to violate the accepted principle of getting paid upfront? This is something which until now has been attempted only as part of an advertising promotion. In actual fact, however, the approach of post-factum payment only appears paradoxical and utopian. In the right conditions and with a change of attitude it can become the norm. Like so much in human behaviour, the way we use money is a matter of habit and beliefs formed as the result of lessons taught by life. The practice of paying for a book but being given a load of trash is no less paradoxical, but people accept it. This kettle of fish suits the producer well, especially a producer with no interest in quality, but if we take the side of the consumer, should we not allow him to ascertain the quality of the product first and only then to settle up? The trader holds back, fearing that this will merely result in his being paid nothing and he will go bankrupt. Collaborative filtering, however, is firmly anchored in group behaviour and the long-term benefits of collaboration. That is why it is an ideal trampoline for the introduction of post-factum payment. What most militates against the post-factum scheme is an anxiety that a person will pretend not to have liked something which he did in fact enjoy, and that he will use that pretext not to pay. In other words, he will behave like a typical freeloader (who does not pay for a good and exploits its accessibility at the same time as others have paid up). The trick is that the member of a group will find it to his disadvantage to play false, because this is likely to cost him more in the end. By not conscientiously paying, a consumer, whether he likes it or not, gives a product a low rating when he should have given it a high rating. To that extent, he distorts his preference profile and is ejected automatically from his group of like-minded people, losing group privileges and in particular the right to enjoy recommendations. He would do well to think twice before being greedy.

Will group sanctions be enough to deter, for example, somebody who has dined in a restaurant from leaving without paying? Restaurateurs have experimented with post-factum payment for meals. They were taking a risk, of course, but there has never been a case of their being left out of pocket. If we are not talking about a one-off tourist trap but a place where you are known, then to leave without paying is to lose face. Unflattering rumours will circulate and next time you will find yourself barred. There have been about a dozen experiments with post-factum payment.

A recent one involved the Radiohead alternative rock group. One of their albums was distributed on a post-payment basis and grossed many millions. Despite the pioneering nature of such actions, we should not pin excessive hopes on them. Are they perhaps successful only because they are exceptional, because they are so rare and extravagant? It need not follow that all will go equally smoothly when such actions become commonplace and lose their aura of exoticism. For a gratuity scheme to become the norm something more, something systemic, something binding, is needed to encourage payers and impose sanctions on freeloaders.

No doubt it is sensible to test the method with small stakes in order not to lead people into temptation before the habit is established. This is typically the situation with digital goods, which rarely involve large sums of money. It seems significant that the retrospective payment scheme originated on the internet, where software is distributed free in anticipation of later gratuity payment.

Take the trade in digitised books. Text files cost nothing to print and distribute, so it is less risky to supply them on a post-payment basis than, for example, steak and chips. If people choose to do so, they will pay, but if they don't little is lost. Previous experience has shown that it is advisable for a producer to name a recommended sum to establish a norm, and then invite the consumer to express his rating against that: the greater the satisfaction, the higher the payment. If on one occasion a group member pays more and on another pays nothing, these facts are visible to the system and will automatically be reflected in his profile and from there on his position in the group. This will prevent anyone from being able to use group recommendations without paying honestly.

The problem of the freeloader is an age-old problem in the creating of social goods. The producer is demotivated when people exploit the fruits of his labour for nothing. By tying the post-factum payment scheme in with collaborative processing of information we are using a standard method to overcome the curse of social goods by transforming them into "club" goods. In a club you are a long-term member, you are on view, and your reputation matters. If somebody comes day in day out to the same place with the same people and they notice that time and again he fails to pay, there will be sanctions. What if the members of the club are his colleagues? In such a situation, petty swindling will prove even more unprofitable. Where everybody knows everybody else's face, a freeloader is not going to last long. The other members will either re-educate him or chuck him out.

One other factor which sustains micro-patronage is that people customarily respond to good with good and do not needlessly burden their soul with the sin of ingratitude. This is confirmed by the ancient ritual of *kule*, the exchange of ritual gifts, which is widespread among preliterate peoples. To accept something as a gift and not respond with a gift is tantamount to allowing yourself to be possessed by the *hau*, an alien spirit. It generates bad vibrations. Reciprocating gifts is an accepted principle, and if in addition to that there is a visible or invisible club to which people belong, and disregarding this norm will result in sanctions, then it is downright foolhardy not to behave properly. This is why people pay five times the price for designer goods, although they know that non-brand (although possibly licensed) fashions are virtually indistinguishable. It is odd that supporting high-end brands is

not regarded by society as a form of patronage, when that is in effect what it is. If you try to be too smart and not pay, you risk losing something more important than the money saved, namely the quality of the relationships in which you are embedded. There are no end of reasons why it would be embarrassing to be stingy, especially if there is a norm by comparison with which you look bad. Mutually regulated behaviour underwrites the stability of many of life's norms, and this is precisely the kind of link which binds gratuity payment and collaborative (club) filtering.

Micro-patronage is admirably suited to the scheme of unmediated commerce. The user saves money by cutting out middlemen while at the same time obtaining a product which accords with his taste. These would seem ideal conditions for patronage, and is it so rare for people to express appreciation that we must imagine they will never show gratitude by paying up? People clap in the theatre without grudging the time it takes. They present bouquets, although the performers might prefer something more practical, like money. But if it is impractical for an impulsive member of the audience to slip the leading lady a tenner, who is to say that, given the opportunity to express his appreciation in monetary terms, perhaps with a couple of keystrokes, there would be any problem? The internet is highly convenient for the micro-patron but, as luck would have it, the habit has become ingrained there of not paying for anything.

Here a modification of post-factum gratuity payment might prove effective, dispensing with money and accepting a barter in time by agreeing to pay attention to advertising. This is particularly convenient on the internet, where a gratuitous impulse can be given instant expression. If the user has been pleased by a text or recommendation or other service, meaning that he has enjoyed some high-quality time, it is entirely logical for him to pay in the same currency of time by donating attention. He does not need to dig in his pocket for change or even to send a premium-rate text message, or submit to a lot of other hassle which is hardly justified in the case of a micro-payment. If he has enjoyed a certain number of minutes or hours of pleasure, he can make a proportionate payment in the form of his time. Monetising accumulated attention is no problem: that is what advertisers are there for. The post-payment scheme merged with settling up by paying attention may prove to be the long-awaited business model for net media. In the future it may be possible to extend its use to other segments of symbolic production.

At present the media oblige the consumer to watch advertisements and that is how they are funded. Television and radio slip advertisements into the flow of their video and audio content. Newspapers, magazines and websites incorporate them, sometimes tactfully, sometimes obtrusively, but essentially the model is an imperative: "Come on, look at this!" Paid television uses the opposite technique. Supposedly collecting payment for content, it is actually making the viewer pay for not having to watch the advertising to which he would be subjected on "free" channels. The model we are considering is different, in that the advertising would not be imposed and neither would you have to buy yourself out of it. It would also have been filtered, which would make it both more effective and less tedious.

The gratuity payment scheme is not something which grows naturally out of collaborative technology. It is a separate, fundamental innovation which goes to the very heart of the institution of money, but collaborative filtering is a convenient bridgehead for running the practice in and popularising an approach whose time has come. The idea of post-factum payment is in the air we breathe. With every passing month there are reports of new experiments, but the scheme will only take off if gratuity payments can fulfil several functions at once. Major institutions like money never appear for just one reason and never serve just one purpose. They always appear at the point where many interests intersect and perform many functions. Micro-patronage is no exception. It has a real prospect of becoming widely accepted only if it performs several parallel tasks: (1) signalling the quality of goods or services and providing direct feedback from the consumer to the producer; (2) enabling the consumer to make his views heard; (3) generating revenue for producers of cultural products, and royalties paid to creators and rights owners; (4) auditing the symbolic realm (which we discuss in detail in Chap. 3).

If we bring together all the arguments in favour of micro-patronage, they will undoubtedly suffice to justify implementing it on a large scale. Those already evident are:

1. The psychological value of charity for the donor himself;
2. Unmediated links between consumer and producer and the opportunity of personally making fair payment to the latter;
3. The sense of community of a group of people behaving charitably;
4. Reducing the value of money and increasing the value of time, which is a characteristic of well-functioning societies;
5. An easy way of donating.

2.8.1 Insuring Cultural Goods

Collaborative filtering creates the conditions necessary for insuring cultural goods. At first glance this appears to be an oxymoron. People usually insure things against damage which can be documented. That art can wound the soul there is no doubt, but can it be documented? Disappointed hopes from a movie? What criteria would underpin an insurance claim? In fact, all that is necessary is for the claimant to say it was so. The safeguard will be that same mechanism of mutual regulation and restraint which underlies the post-factum payment scheme.

Let us take cinema as an example. At present the cinema-goer is sold the right of admission to the auditorium. There is no guarantee about the quality of the movie. A recommender service can provide its user with a prediction of how much he is going to enjoy it. With a click of the mouse he can call up a whole list of movies, sort them by their predicted rating, and from then on watch only good movies. Unlike the movie maker or the movie distributor, a recommender service is answerable for the reliability of its predictions, which is its basic product. If after the viewing the user rates the movie worse than was predicted, the service has to

pay out. A simple calculation suggests that up to half the cost of a ticket, 200 rubles out of 400, could be refunded to all complainants without exception. Beyond that, refunds could be made only to those who paid an insurance premium.

What will save the insurer from bankruptcy when users rush to him, claiming they did not like their recommended movies and demanding refunds? That same restraining factor of reputation within a group. It makes no sense at all for the participants of a collaborative system to attempt fraud. They risk losing more than they will gain. In order to be in a position to join an insurance scheme, a person will have had to build up his profile by rating a minimum of 100 movies and to have been on the site for a considerable period of time. Before he can lodge insurance claims he will have had to buy tickets and watched quite a few movies, since the recommender system issues high-quality predictions, rarely makes mistakes, and without tickets there will be no insurance payouts. If he does nevertheless fraudulently make an insurance claim for a movie he actually liked, the whole chain reaction will begin. His profile will be distorted, he will be ejected from the reference group, and the quality of recommendations will decline. There will no doubt be people who will not be deterred by this, but such exceptions will be covered by the insurance premiums collected from all the others.

2.8.2 A New Business Model for the Electronic Media: Customised Trust Advertising

The post-factum payment scheme is a pivotal innovation from which much else can follow. It is nice to be good, it is unprofitable to be greedy because group sanctions will follow. Such is the basic stick-and-carrot logic, but this can be taken further. Instead of merely restricting the privileges of non-payers and symbolically encouraging donors, the latter can also receive monetary rewards. The user is already prepared to pay, he is additionally under pressure from group sanctions, and here as a trump card he is going to be paid a bonus. The idea of paying a donor is suggestive of the fallacy of perpetual motion. A person pays and then gets his money back. Where do we get the grease for the machine and what has happened to energy loss through friction? In order to find the solution, let us remind ourselves of several basics of advertising theory.

An advertisement pursues three goals: (1) to provide information about goods and their producer; (2) to hook the purchaser and program his choice; (3) to evoke trust by finding a way to signal the product's quality. Strange as it may seem, trust does arise, despite the fact that the seller is praising his own goods. The paradox is described in detail in game theory. The advertisement's effectiveness comes from the already familiar sacrifice mechanism: by spending on advertising the seller is giving a pledge and demonstrating he is confident that shoddy goods will never be associated with his name and cease to be bought.

The implied message is that "Things which are advertised are good," and in most cases that is right. Not always, admittedly. By no means all goods and services are repeatedly purchased, which means that once the money has been paid it does

not matter all that much whether the customer is satisfied or not. He will have no opportunity to complain. The proportion of such one-off goods in the New Economy is growing. Moreover, there may be a sufficient interval between acts of consumption for the compromised product to disappear from sale or be presented in a different guise, or the purchaser may simply forget his negative experience. In effect, these are variants of single-experience goods. In the second place, disappointing and losing a particular customer may not matter if the producer knows he can find plenty of others who will not know what happened. In the third place, part of the problem may in any case lie with the customer himself who may not know what he is doing or misuse the product. He may ultimately write off the failures as being his own fault and keep trying the goods. There are other subtleties which we need not go into. The grand solution was to introduce brands. These work like aggregators and guarantors of trust and cover a whole range of goods sold under their logo. There is a kind of joint liability here where, if one product fails to meet the customer's expectations, a shadow of suspicion will fall on the brand's entire range. Brands do therefore have a worthwhile incentive to deal with customer dissatisfaction.

Even brands have some scope for mischief but that is not the point at issue. Our concern is the kind of social costs which result from the present system where the main source of information about the quality of goods is the seller. "White box" goods, that is unbranded goods of identical quality, and sometimes even made by the same manufacturer, cost 30–40% less than branded goods. Would it not be better to listen to the voice of those who have bought goods and are prepared to judge them with greater impartiality? We come back to collaborative practice, but this time the aspect which interests us is not its ability to inform consumer choice or to mesh supply and demand, but a fundamentally new form of advertising in which the praise of goods can come from the end users. How so? After all, one's instant reaction is that advertisers will welcome the monitoring of their products by users much as they might welcome a fishbone in the gullet. Advertisers cast aspersions over personal endorsements, claiming that they are paid for and hence insincere. There is, however, a way in which these seemingly incompatible elements can be admirably reconciled.

It can happen that a user really has liked goods, and has both the motivation and the mechanism to publicise his assessment. If conventional advertising deserves to be trusted because of the element of pledging, then the variety of advertisement we are about to discuss deserves it even more.

Let us imagine that there are some really high-quality goods on the market which are having difficulty finding their ideal purchaser. They are getting lost among all the low-quality offerings. Let us also imagine that a number of people have nevertheless been fortunate enough to come across them and to appreciate their merit. For the firm producing the goods, these people are worth their weight in gold. They are a living advertisement. The problem is that what they have to say about the product is not being widely heard. Now let us suppose that the opinion of these admiring customers can be stated in public and brought individually to the attention of people it might potentially interest. Suppose further that the people who rated the goods so highly now sign a contract to advertise them. That is a brief outline of the variety of advertisement we are talking about. Let us look at it in more detail.

The first priority is honesty and trust. It is one thing to praise a product disinterestedly, but quite another to do so with an eye to potential dividends, which could lead to all manner of goods being praised to the skies. There is a difference here also for those on the receiving end. It is one thing to listen to advice given without an ulterior motive, but another if you know that the person making the recommendation is being paid to do so. Has not the crucial basis of trust already been eroded? We have seen the answer: opportunism is held in check by the already familiar mechanism of restraint and mutually regulated behaviour.

The second issue is, where is the financial reward going to come from? This brings us to the crux of the matter. The user is invited to advertise on his pages only those goods which he rates highly. In real life, off-line, people tell other people what they have liked or enjoyed. Why not online? Until now one link has been missing: a means of coordinating the demand for advice with the supply. More simply, it has not been clear who to accept recommendations from and who to address them to. Collaborative filtering solves the problem because bringing compatible people together is what it does. In order to adapt offline word-of-mouth recommendations to the internet, we need to identify objects rated highly by a user and then obtain his agreement to place an advertisement for the businesses involved. The advertisement will be spectacularly well targeted because it will be seen mainly by people who attach special weight to the opinions of that particular user, and accordingly the goods demonstrated are very likely to interest them. Rating various goods and services and selecting like-minded people are among the basic functions of a recommendation site, but why should a user agree to advertise? We have already said, he will be paid to do so.

The detailed scheme of a customised trust advertisement is as follows. The system “sees” all positively rated items and invites users to advertise goods they have genuinely liked. In order to accept the proposal the user has only to tick the items he agrees to advertise. Needless to say, these can only be objects he has already rated highly. If somebody prefers BMWs to all other cars and is proud of it, why should he not announce the fact a little more publicly than usual? Having obtained the agreement of a pool of such users, the system can compile a summary list of items which can be advertised on the site, and this can be brought to the attention of potential advertisers.

The advertiser can see how many users are willing to advertise his goods. He can see the number of hits the users’ pages receive and the potential target audience of an advertisement placed there. All involved are in a position to sign a contract. Payment for the advertisement is directly linked to its effectiveness, which is a recognised advantage of the internet. This scheme also makes it possible to determine the contribution of each user and the proportion of advertising revenue due to him. The advertisement is placed on a person’s home page and on those he has been involved in creating, and all viewings of these pages are added up, so there should be no problem about how to divide the revenue. Trust advertising can work not only on recommender portals, but equally on any site with collaborative filtering functionality. The main thing is availability of a valid user profile. Part of this profile can be generated on a site specialising, for example, in cigars, with the accounting carried

out on the central recommender portal. In this way, alongside contextual advertising, the trust advertisement can provide a new source of income for the whole internet.

This business model may suggest an analogy with sandwich board men pacing the streets, but this would be unfair since those participating in a trust advertisement programme are not promoting anything as part of their job and are not demoted to the status of a walking advertising hoarding. Those who wear particular brands of clothing, carry bags with logos or drive cars are not likened to sandwiches. Everybody is advertising the goods they use in public, and advertising themselves through the goods they wear. Everybody is their own sandwich. At the very least, this approach is preferable to arbitrarily imposing advertisements on users' pages. And, needless to say, trust advertising should be paid at higher rates.

There are a couple of other considerations. This scheme is a fundamentally new kind of advertising. It is not the firm praising itself to the skies, or some consumer bureau which might have its own agenda. The product is being attested to by its end-user, a person with a name, a history and a reputation. We are close to the ideal where goods speak for themselves, or at least make themselves heard through the voices of those who appreciate them. Something of particular value is that the targeted recipient knows whose voice is singing the praise. In essence this is no longer pure advertising but something halfway between promotion and a system of personal advice and endorsement. It enables a real partnership to be formed between the producer and his consumers based on opportunities and needs, and a reciprocated appreciation resulting from it. It is that rare compound of goodwill, sympathy and convenience which you come across in local markets but which has disappeared from global markets because of the fracturing of human contact and the depersonalisation of the producer.

Nowadays, exchange relationships are increasingly based on the principle of who can outwit whom, something facilitated by the practice of discounts and sales. As a result, relations degenerate to an inflexible scenario, which is disappointing. It is difficult to think of an industry which has had more influence on the modern way of life than aviation, including aircraft manufacturers, airlines, and other players in the sector. The frequency of strikes and bankruptcies indicates, however, that this highly complex sector is insufficiently appreciated. Unlike designer brands, for which people have little hesitation in paying super-premium prices, people booking flights usually go to extreme measures to economise. This despite the fact that wearing a haute couture dress for a couple of hours has almost become more expensive than taking a business class flight across the Atlantic. We are not suggesting renunciation of market competition, but a warming of the micro-climate of commerce through direct human contacts would be in the interests of all conscientious players. By taking advantage of customised advertising and the concomitant trust it enjoys in groups of like-minded people, a firm will gain an incomparably better return: the internet equivalent of a good reputation.

But what if a user generates artificially high ratings in order to boost his earnings by advertising as many goods as possible? It might be interesting to try, but it would be counterproductive. The profile would be distorted, no appropriate reference group would be found, and the page would not be seen by those it was intended for. If an

advertisement goes to the wrong address it produces less effect (as can be tracked on the internet) and will not be remunerative. A user who decides to try to play the system will have little success, and his reputation and goodwill will be dented. These are something the system can compute from the reactions of other users to a particular individual's actions.

For all that, some distortions and abuses are possible and even inevitable, but they will not be decisive. No matter what people are advertising, the business model will ensure that their recompense is linked to demand for the information they create. The more alluring the advertising of goods is for users, the more people will seek a slice of the cake and the proportion of each will be automatically reduced. To win systematically in such a game is no easier than in a casino. In addition the system is capable of detecting fraud, neutralising negative consequences and blocking abuses. This is possible because there is a whole range of defence mechanisms, based partly on the fact that much on the net reflects the offline world. Any single possession out of all those with which a person surrounds himself, viewed in isolation, might create a false impression of him, but taken together they do not lie. On the internet everything is just the same: ratings in the overall profile reflect a person's inner world, which is why it is not a simple matter to falsify them. One could of course make a determined effort and even achieve a measure of success, but not without incurring costs. It seems unlikely that many people will be seduced by ill-gotten gains of this kind.

The model of trust advertising is at the very least comparable in importance to the contextual advertising which has made internet search systems big business. Before the idea of selling contextual words to advertisers it was not clear how search engines could be monetised. As a result of this bright idea, a source of revenue appeared, in the wake of which search services grew explosively. The future of recommender systems lies in selling their basic goods, recommendations. Search and recommender services are complementary tools of the information society, the former providing access to information which the latter selects in accordance with subjective criteria. As soon as recommender services acquire their own business model, they will begin to rival search services in popularity.

So why has the idea of monetising networks through trust advertising not been thought of before? In part this is because the conventional leisure social networks, for all their high volumes of traffic, generate extremely meagre cash flows. We shall discuss this in the next section.

2.8.3 Prospects for Monetising Social Networks

Social networks on the internet have attracted vast amounts of attention. From the experience of contiguous branches of the media, this should represent a considerable commercial value when monetised with advertising. The question tormenting their owners is accordingly, "When will the networks start making decent money?" And what do they need to do in order to bring that about as soon as possible? Can profit in

principle be extracted from social networks and, if so, why is it taking so long to happen? A secondary question of considerable interest is who this golden rain is going to fall on. Will it only be the owners and a few elite personages like popular bloggers who can look forward to becoming beneficiaries of the network, or can ordinary members also look forward to some profit?

Selling advertising, the business model of traditional media, has not so far proved very effective on social networks. The revenue collected has been infinitely less than in such other aggregators of attention as television or the press because the ultimate effectiveness of advertising on the networks is not particularly high. This reduces the cost of placing it. Moreover, users who get nothing out of it react badly to advertising, especially if it is placed on their personal pages without their consent. Aware of their importance for the network, they expect to be treated politely.

Throughout the world large numbers of bright people are puzzling over how to monetise social networks effectively, but it is becoming increasingly plain that for Web 2.0 sites there is no systemic solution. One can place advertising on general and personal pages; one can trade marketing information about users; one can charge them a fee to free them from inconveniences and restrictions one has first saddled them with. A little business can be done with highly rated bloggers and their postings. Money can be charged to display a photo in a prominent place. Virtual gifts and tokens of attention can be sold. There are a number of other ways of clipping the punters but so far none which yield the desired level of income.

While investors and a few professional bloggers are reaping a harvest of sorts, rank-and-file users of the networks have no prospect of earnings, yet these people contribute to the networks' value. They are jointly working up an information product. There is a contradiction here. Logically, the income of the networks and the income of its participants should be interconnected, and the one is not going to grow markedly while the other remains at zero. A firm which does not pay its employees will not prosper by relying solely on volunteers with their non-mercenary motivation. If a way could be found to pay users they would immediately start producing a vastly superior product and overall revenues would grow. But how can you enable users to earn if you can hardly make ends meet yourself? To rely upon generating income for some members of the group by taking it from others, as bookies do at the racecourse, is out of the question, against the ethos of the internet. Neither will it be possible to charge admission to newbies for arriving after all the work of setting up the network has been done. Each new recruit increases the value of the network, so it is unprofitable to raise entry barriers. Even just sharing the advertising revenue with participants of the network is problematical. At present there is, in any case, nothing much to share. The crumbs which would fall into the account of an ordinary user in recompense for displaying an advertisement several hundred or thousand times are not a game changer. It would be a different matter if we took the revenue of the entire network and shared it according to each participant's contribution, but this is not a Web 2.0 narrative, partly because it is unclear how the resources should be distributed. It could only be done by openly stratifying users, which would be risky. It is in any case pointless to talk about this at present, since averaged income divided among

the total population of the network, even for the most visited sites, would barely add up to more than one dollar.

Of course, the earnings may not always be so meagre. It is no doubt indicative that the USA's Internal Revenue Service has taken steps to tax any income from the internet, thereby officially recognising that it is a place where private individuals earn income.

Let us allow ourselves a brief digression, since it concerns an important trend. As the internet becomes more commercialised, it is increasingly being subordinated to the offline world and obliged to play by rules established there. Initially the virtual world was seen by romantics as a sovereign space to which you could retreat, like a monastery, and live there according to your lights. Nobody could have anticipated how soon this specialness would begin to drain away. Copyright and endless offline lawsuits in connection with violations of copyright were the weapons which led to subjugation of the virtual territory. Although this course of events has to be regarded as predictable, there is a vague sense of a global dereliction of duty, and perhaps of a miracle which was never allowed to take place. It is as if the human race, having stumbled upon a highly promising discovery, decided not to take the risk of exploiting its potential but knuckled under to traditional rules and current vested interests, mainly commercial. These, as usual, crushed everything with the result that development is following a lower trajectory than it might have. Who knows, perhaps these regrets are premature and electronic networks will yet come into their own.

Social networks will not produce serious profits while they are based on Do-It-Yourself rather than creating a product for an external environment. If we take, for example, football in the street. Small boys do not get paid for kicking a ball around. Revenue only appears for those who play in front of grandstands and television cameras. Children would not be paid for playing in the sand unless they took to wearing advertisements on their T-shirts. Analogously, on today's social networks it is only the top talent which can earn anything, and they are not free to do what they want when they want to. This is the distinction between professional work and the amateur games currently in evidence on the social networks. It is a Rubicon which cannot be crossed by Web 2.0 sites. The prospect of earnings for rank-and-file users comes only with sites of the Web 3.0 generation, where users not only generate content but themselves certify it, thereby generating a product of vastly higher quality: information about the quality of goods and services. This is a facility beyond the means of today's best known social websites.

2.8.4 An Explanation of Demand and Unmediated Distribution

An inalienable part of the technology of collaborative filtering is the revelation of consumer opinion about the quality of goods and services. There is a royal road from this to commerce without middlemen. All distribution of goods is based on the proposition that the businesses and agents who form the links in the wholesale-retail

chain possess increasingly detailed information about demand the closer they are to the end purchaser. The commercial agent makes his living from knowing what is required, and he risks acquiring a surplus of goods if his information proves inaccurate. Degrees of markup more largely reflect payment for information than for transport and warehousing logistics, technology, and financing the supply of goods. The efforts of producers to cater for every variety of taste and every individual requirement lead to an increase in the array of products on offer. This causes the price of knowledge about demand to rise, and increases the added value which middlemen bite off. Variety is by no means a free good. It was no whim of Henry Ford which dictated that every model-T coming off his conveyor belt should be black. The middle class emerging at that time could not have afforded a variety of different colours.

This was not because paint was expensive, but because of the overheads associated with wider choice. By comparison with standardised output, variety involves greater production costs and incomparably more expensive distribution because of the difficulty of predicting precisely how much of each product to manufacture and store. It is a fact of economics that the more modest the choice the lower the price. A bottle of beer chosen from 57 varieties set out on the counter will set you back twice as much as exactly the same bottle chosen from ten varieties. This is a universal logic which operates in every segment of the economy. To make matters worse, the varieties of different categories of goods have to be coordinated since a wide assortment of shirts makes no sense if there is a limited choice of ties. Significantly increasing choice makes everything an order of magnitude more expensive. If some particular category of demand is satisfied by a number of associated businesses manufacturing a restricted assortment then, allowing for their profit of 10–20% and the retail markup, the product will cost the retail customer around one-and-a-half times the manufacturing cost. That was effectively the situation in the planned economy of the USSR. The retail prices we see today are several times more than the manufacturing cost. Incidentally, that is why it is a mistake to directly compare different economies in terms of GDP without rebasing them to a common denominator which takes account of variety, as is often done (perhaps deliberately) when comparing the present economy of Russia with that of the late Soviet period. Despite the fact that the GDP is formally the same, the contemporary situation is many times better and more effective. A command economy does not need to work so hard to feed and clothe everyone, outputting identical boots and margarine in large amounts. But actually it has not even the strength to do this, or more precisely, it lacks the motivation to put the strength it has into work.

Thanks to the recommender service, the needful information about demand will come directly from users, significantly weakening the need for middlemen. In a collaborative system you can see how many people have an interest in a particular item, which clarifies the ultimate demand for the producer, including demand which has not been satisfied by previous batches. This makes it possible to move to more economical schemes of shifting goods, like subscription, direct sales, and promoting new products with the aid of pioneer raters. Each has its own

business model. The outcome will be a better coordination of supply and demand, a reduction of marketing costs, and possibly, most significantly, optimisation of choice by cutting back on the manufacture of products for which there is no demand, i.e., unsaleable goods. Double or even triple markup over factory cost is the price society is paying under the current distribution system for its love of choice. Direct feedback between producer and consumer promises to prove a valuable resource for economising on social costs. Economising is expected, then, to be possible firstly by dispensing with middlemen, secondly on the logistics of goods and money, and thirdly by partly replacing monetary settlement through the bartering of attention.

2.8.5 The Alternative to Copyright

In a number of areas the scheme of unmediated distribution is not only logical and timely, but also relatively easy to implement, with clear economies in all three of the aspects listed above: informational, logistical, and barter. These are the cinema, music, literature, the media and other digital industries, where there is no necessity for physical delivery or the prior creation and storage of an assortment of goods in case they are needed. This is precisely because the product is digitised. Today copyright rules OK in all these segments. As is to be expected in a world dependent on the movement of information, legislation regulating property rights to information plays a key role, but the traditional system of safeguarding authors' and associated rights is looking ever more out of date. It is time for a change.

Copyright is a bridge between art and commerce. It feeds both authors and commercial agents, manufacturers, publishers, impresarios. Production and distribution cannot dispense with any of them. The purpose of copyright is to block freeloaders and enable creative artists to harvest the fruits of their labour. Without copyright, commercial competitors would be free to pirate works created and launched by the hard work of somebody else, thereby taking a bite out of their legitimate income. This would discourage business people from becoming involved in cultural projects and lead to underproduction of the corresponding goods.

As we shall find out below, copyright serves mainly the interests of agents and middlemen, while we are talking about cutting out the middleman, an approach directly opposed to copyright. Let us try to understand the differing perspectives of these two systems. We will need to take a little time to understand the problems of copyright, which is arguably the most complicated and controversial law of modern times. Invented 300 years ago, it met the needs of its age, but since then circumstances have changed and there are many grievances. Let us briefly list them.

1. Copyright has made business people the main players in culture and has, moreover, led to the appearance of monopolists who inflate the price of cultural production. People do not want to pay way over the odds for songs which in their (not entirely informed) belief cost nothing to produce and are easily copied.

2. The major corporations oppress authors, do not pay them properly, and prey on them.
3. In the past, copyright regulated a modest part of cultural production. Today, when peer-to-peer (file exchange) networks have created the opportunity for mass evasion of copyright, the law has been made more draconian in reaction. People continue nevertheless to exchange works hand to hand (as if this were occurring in a family circle, only one which has just become infinitely extended). Rights holders everywhere see a threat to their income, and on that basis demand total monitoring to see whether anybody has copied anything illegally, even if that means violating people's privacy, since the rights holders treat everyone as potential criminals. Protection of some rights leads to violation of other, more vital, rights and freedoms.
4. Copyright has been extended to derivative items, with the result that every fragment of a text can be registered as somebody's property. A work is not born in a vacuum, however. It has to start from something achieved in the past and known to the public. It transpires, however, that everything belongs to someone and you have to haggle for permission to use it. This creates artificial barriers to creativity. Creative artists who have forged ahead of the field and are already established are protected, but all those behind them are mistreated. This works in the interests of narrow groups and to the detriment of culture.
5. It is often difficult to understand what can be lifted and under what circumstances, which leads to violation of the law through ignorance. Copyright law has opened the way to lawsuits in every connection, and in these disputes power is naturally on the side of the corporations. This unties their hands.
6. Copyright was created in order to stimulate creativity economically, but in fact it makes life more difficult for creative people (with the exception of stars). Thanks to copyright, businesses have taken possession of the whole corpus of creative artists' rights and have consolidated to a point where in each sector they can be counted on one's fingers (for example, there are four principal majors in sound recording). The creative artist cannot afford not to play by the corporation's rules and it dictates the terms. All that can be created is what the corporation is prepared to promote. Nothing else, with rare exceptions, gets into production.
7. Copyright does not protect the property interests of authors. No matter what may be written in the law, royalties are determined in the course of negotiations with the producer, or in this case the publisher, and here, with the exception of superstars, the situation places the author at a disadvantage. Should he prove obstreperous, others can be found to replace him. It is impossible to live without earnings for long and there are very few other corporations to turn to. As a result, creative artists are underpaid.
8. The law was passed in an age when poverty meant that by no means all talented people could afford to create. Under these conditions, economic stimulation of investment in culture was justified. Today no incentive is required: those striving to express themselves creatively are legion. In earlier times there was a hunger for content and the information space needed to be filled. Now it is

overfull, while a mechanism, devised to ensure further consolidation, continues to operate.

As we see, there are no few grievances on a variety of levels. Masses of people, feeling that the law is unjust, break it. Piracy would not be so ubiquitous if it did not have support among the people. Copyright is now in marked conflict with its initial goals. Should society use copyright to continue protecting the earnings from culture of a few small groups against the interests of the many? The contradiction is evident and will not go away.

Copyright does, however, have its defenders. They argue that without business support a creative artist has no chance of gaining the widespread recognition for which he thirsts. The maxim beloved of art connoisseurs, "Genius will out," is empty without a market presence. The creative artist cannot do without the businessman, and the latter will not take up the cudgels unless he is sure that the fruits of his labours are under his control and will not be filched by somebody else. The author turns to an agent for support at a time when nobody knows whether there is money to be made. The agent agrees to take part in a risky venture only on condition that, if things go well, he will get his cut. The aim of copyright is to ensure this. The fact is that the publisher, like a merchant, takes on the risk of correctly guessing what is going to be a saleable commercial proposition in the future and in return wants to have a firm right to the income. Abolishing copyright is tantamount to doing away with the intermediary. If we are to take this matter seriously, we need to ask the question, "How can we get by without a publisher?"

The apologists' second argument is that opponents of copyright underestimate the contribution of business. They are not in possession of information about the true costs and mistakenly believe that publishers are fleecing the artist. In accordance with the market norm, an author can expect under his contract 10–20% of the revenue. At first sight this division seems unfair. One in five or one in ten: the author's take seems pretty slim. That 10–20%, however, is being paid to a successful or, more exactly, profitable author. In the majority of cases authors are unprofitable. They bring the publisher losses which he has to recoup from profitable projects. It can be said that successful authors rescue unsuccessful authors through the mediation of the publisher. The widespread opinion that authors are being paid too little and businessmen are taking too much is incorrect: taking account of loss-making projects, the income is being divided more or less fairly.

Although in the minds of most people copyright was invented for authors, in fact what it really does is incentivise entrepreneurs. The institution was from the outset conceived as rigorously commercial. Questions of morality and concern for the creative artist are far from being at the forefront. In the first law of copyright (Statute of Anne, 1710) there is no mention of authors at all. The topic is exclusively the rights of the publisher.

And yet, no matter what arguments are put forward, people cannot get their heads round all those agents' cuts. Most would like to see creative artists paid more and the product costing less. The only way this is possible is through a radical reduction of distribution costs, which is what we are coming to. Under the existing

technology, the producer model of culture costs society a sum consisting of production and promotion costs. If public opinion agrees that the producer is getting too much and artists too little, while the customer is paying too much, it is possible to try to do without producers. It is, however, impossible simply to decide to remove them from the chain of production. Somebody has to take on their work, which is principally the selection and promotion of talented artists, and also their other functions, and to do it all for less money.

We thus arrive logically at the unmediated scheme and at group filtering. A first attempt to implement this was made in 1999 in the celebrated Napster project. With the aid of file exchange networks (a brilliant invention thanks to which users are able directly to exchange interesting content) Napster intended to identify and promote musicians through the efforts of listeners. Realisation of the plan was prevented by a lawsuit which closed down the site for copyright infringement. It has to be said that, even if this had not happened, one essential link for success was in any case missing, namely a selection mechanism. Many aspire to fame, and there has to be a way of deciding what each hopeful is worth. Otherwise, a promising performer risks being swamped, and the consumer risks being drowned, by myriad graphomaniacal opuses, some of which might possibly appeal to him if he ever got to see them. There was also no answer to the question of how performers were to be paid. It was assumed that, having gained a reputation on the internet, they would make their fortune beyond its boundaries on the basis of increased demand for their concerts.

Technologically, then, the internet was ready for unmediated commerce 10 years ago. Everything ground to a halt because of the absence of two mechanisms crucial to the New Economy: (1) end-user evaluation with the aid of collaborative filtering; (2) post-factum gratuity payment able to provide creative artists with an income. Consumers have only to get used to acting as patrons of the arts, and begin voluntarily paying for the products they have enjoyed, to discover that they need pay only one third of the current retail price. The unmediated electronic scheme reduces the cost of the product many times, and that is the social benefit which is at stake. Moreover, the artist will be paid two if not three times as much as at present and additional sales will be delivered by collaborative filtering, which can identify a latent niche market. If people genuinely, and not just declaratively, are concerned for their favourite artists, if they truly are so opposed to copyright, they will adopt the post-factum scheme. To summarise what has been said, we will see that we have a valid alternative to copyright. Of the three essential components, two are already to hand: e-commerce is expanding ever more widely, and a recommender service based on collaborative filtering is functioning. The next step is voluntary post factum payment but, heaven knows, it would be difficult to imagine better conditions for making a start with this practice than e-commerce with digital content.

No matter how controversial copyright may be, in the present economy a lot hinges on it. Accordingly, it is naive to suppose that people will voluntarily give the institution up, or that there can be some forcible solution to the problem. (If such a thing is possible, then it will most likely end in favour of copyright.) It is very

revealing that in 2002 a group of 17 highly eminent scientists, including five Nobel prize winners in economics, addressed objections to the Supreme Court of the USA to the extending of the period of copyright at the instigation of Disney Studios. (In the course of the last century it has been extended dozens of times, whenever the copyright period of representations of Mickey Mouse was about to expire.) The signatories claimed that the extension was economically senseless and harmful to culture, but their arguments were not accepted. Other, also authoritative, economists were found who put forward directly contrary arguments, and these were specialists in legal economics, among them Stan J. Liebowitz, Stephen E. Margolis, William M. Landes and Richard A. Posner.

This example confirms that the fate of copyright will be decided not so much in debates as through market competition with the institution of user evaluation and unmediated commerce. With the growth of direct links between artists and their public, the need for mediators, and correspondingly for copyright, will weaken. It may be strategically advantageous for a beginning artist to reject copyright. If he has talent, he will attract attention on the internet and be promoted to a prominent position. Those able to gain fairly wide popularity will find themselves in the ideal situation of being their own masters, obliged to no one for anything. Today it has somehow been forgotten that creative artists do actually have a place in the practice of copyright. Without their initial agreement to concede copyright to corporations there would be nothing there. However, up to the present time this “unconditional surrender” is inescapable because of the lack of other ways of earning an income and building a career. When there is an alternative, artists will be able to decide for themselves which approach is better for them. Stars who have made their name within the framework of the old system will probably not change, but for the rest there are good grounds to try the unmediated approach, knowing that they are not risking anything. For example, authors of highbrow books are today unable to live on their literary earnings. The print run of books is wretched and the royalties correspondingly low. Physical distribution lags behind, because it is impossible to service a tiny, geographically dispersed demand, even if it is known to be there. An author will lose little if he moves to internet distribution with post-payment. He stands to gain an immeasurably greater public than he would with a paper book, and it is likely to be better targeted. Having agreed a direct contract with his public, the author could go on to become the senior partner in an alliance with a publisher. Quite unexpectedly they may exchange roles, and it will not be the publisher benignly tossing royalties to the author, but the author employing the services of a producer.

2.9 The Topology of Taste

2.9.1 Group Recommendations and the Love of Reading

While analysing the diverse practices and institutions growing out of collaborative filtering, it will be as well to remind ourselves that they are built on a solid

foundation. We would be shirking our duty if we ignored a problem which challenges collaborative technology itself, namely, making recommendations in a situation where taste is changing. The basic algorithm for computing recommendations uses a profile compiled from rating of goods which a person has consumed at different periods of his life. Over this time his taste may have changed, and assessments from long ago may no longer reflect who he is today. Likewise, ratings given today may not correspond with an impression made in the past. His interests may have changed. If we do not take countermeasures, this will lead to faulty recommendations. For users with established tastes, the problem is quite easily resolved: outdated ratings are firmly separated from recent ones. If taste is evolving rapidly, however, as happens in childhood, youth and, not infrequently, adulthood too, the computing of recommendations becomes far more difficult. Today's algorithms do not cope with these subtleties, neither collaborative algorithms (for the present) nor any others. Moreover, the problem has not been posed in these terms anywhere in the world. In order to resolve it, we need to select for the user not just counterparts in his group with analogous ratings, but also to extract from that selection people who are at the same stage of taste development. In terms of psychology, it is a matter of hitting the proximate circle of development. In other words, it is desirable that what is recommended should not be too simple, since otherwise it will be boring, and not so complex that the user will give up in despair. Developing motivation and interest is the subtlest element in personal development. Today it is unduly dependent on the quality of one's instructor, and luck.

Let us take as an example adolescents' reluctance to read. The problem is constantly discussed, but without any very obvious conclusions being reached. A majority of children read under duress because they don't find reading interesting. The books adults urge upon them are what the adults found absorbing when they were young, but today they are incapable of enticing many away from the monitor. School reading lists contain a dazzling, polished corpus of texts, but they are not exactly pageturners.

Collaborative technology can enable us to generate a qualitatively different offering of literature. It is necessary to identify users, preferably of the same age group, who have read the same books in the same sequence and moved on to the next stage. Works which gripped them in this phase slightly ahead of the user's present development are the ones children should be advised to read. Then one should put one's money not only on the fact that a book is good. That is not enough. It needs also a well chosen context of perception, as positive experience of advisers tells us. Mathematically, the task comes down to calculating the proximity of trajectories along which taste has progressed, and this is more difficult than establishing a similarity between collections of numbers which characterise the tastes of users. It is essential to detect similarity between series of ratings. This task is not elementary, but very promising, and resolving it will lead to a breakthrough both in the field of recommender algorithms and in educational technologies. Not only literature and the whole sphere of culture, but also mathematics, natural science, history, chess, and other areas are in urgent need of finding "itineraries"

of tasks, balanced between the coordinates of interest and ability. In all cases it is of fundamental importance to hit the proximate circle of development. An automated selection of appropriate study material will make it possible to alleviate one of the most acute problems of the present system, a levelling approach to teaching. This is a problem not only for school education but also for the self-education of mature people, who can find it very difficult to master a new area.

Experiments with developing tastes will help us to find the key to one other very old problem: how to objectively determine quality in art without relying on “authorities.” Although today the topic of a hierarchy of artistic quality is avoided (not least because of an injection of post-modernism), deep in the heart of many people the hope springs that quality does in fact exist (as does a lack of it) and that some day it will be possible to argue this out rigorously. The collaborative mechanism already allows us to replace the question of, “What is quality?” with the questions, “Who considers this high quality?” and “For whom is this a work of quality?” “What” becomes “who.” When we teach the collaborative system to weigh up who is who in the symbolic realm, it will be possible to return to this question of a hierarchy of artistic quality. For the time being it is customary in the art system to rely on tables of rank compiled within the professional community. The problem is that these hierarchies often turn out to be politicised or constructed in accordance with extraneous interests remote from culture. A recommender system makes it possible to overcome these snags.

2.9.2 Encouraging Good Taste

Even a brief analysis of the dynamics of taste allows us to dispel the worry which critics voice from time to time that recommendations supposedly lead to a conservation of tastes and slow down their development. In doing so the critics base themselves on the following erroneous postulate: since the exchange of opinions is occurring between people of a similar circle, there is no opportunity for growth. The reality is quite the opposite. Collaborative technology does not level taste down to the level of the weakest but draws it upwards. People, when they are given the opportunity of choosing the best, do in fact prefer the best. It would be strange in that situation to choose what has been rejected. From experience of the functioning of collaborative sites, it can be said clearly that nobody behaves in this way. Accordingly, the system of group selection works as an incubator of taste.

To stretch a point somewhat, perception of a work of art can be characterised in terms of complexity. This complexity is of roughly the same kind as that of chess compositions. Solving a problem to his taste, a person experiences aesthetic pleasure, and in the process trains his taste and acquires artistic competence, which in turn prompts him to solve more and more complex problems and promises new helpings of pleasure. With the growth of complexity, the muscles of taste are toned up, while long periods of neglect lead to a loss of fitness in taste. It loses its edge and

degrades. Accordingly, even just blocking the worst and pointing to the best has a beneficial effect on taste.

Despite the fact that experience is being exchanged within a taste community, its members are not clones and do not consume the same thing at the same time. If some addict of fantasy gives a high rating to, say, the Russian art movie “Cloud paradise,” he will bring it to the attention of the rest of his circle. Similarly, a blockbuster fan has only to receive pleasure from essays about life in ancient Rome for this automatically to become available to his taste neighbours and their friends.

The problem of cocooning is thus purely imaginary. When people exchange quality experience, the average level invariably rises. We should remember too that the system does not confine anybody within the walls of a mechanically selected reference group. If you wish, you can take a closer look at the interests of other groups and people. The partitions are entirely porous. You can inspect the choice of others with whom you have coincidences in rated works, and you can read professional criticism (fortunately, recommender systems are capable of identifying critics who are closest to a particular user). Collaborative filtering makes models deserving of emulation visible, which is an important way to develop good taste. It is similar to what takes place in computer games: it simply doesn’t happen that a person for no reason decides to regress from an advanced level to the beginners’ level. Everybody climbs upwards, and the fact that you can choose your own pace is decidedly helpful. A recommender service delivers the same kind of progression.

2.10 The New Economy is an Economy of Clubs

Let us summarise what has been said in Chap. 2.

The prospects for society are closely tied to the development of group life. The link is not obvious, but extremely important. The quality of life both of the individual and of society as a whole is directly dependent on how effective the tools are for forming groups, clubs and communities. Many problems are solved by organising groups within a community. This is why the tools for forming them are so important and why the prospects for third generation social networks are so promising. Creating new mechanisms and institutions for group building is at the top of today’s agenda, and everything reviewed in the present volume relates in one way or another to that topic.

A club is a group of people who are in some way of interest to each other, with whom a person can find shared priorities and enthusiasms and thereby realise his own potential. The discovery of such groups, joining them, participating in them is both a goal and reason for living for each of us. It is a path to personal happiness because this is how people come to self-realisation, by raising the quality of their communication. They meet other worthwhile people in the context of issues which matter to them and thereby manage the quality of their time. Improving that is the true aim of a human being. Groups are also a way of balancing the interests of society

and the individual. They enable a person to acquire a comfortable environment and shield himself from uncongenial people.

The New Economy serves the acute social need for stratification, differentiation and association. If we understand this we can gain a proper appreciation of the lifestyle it offers. The process of differentiation, with an institution supporting it, is in the interests of each and every one of us, since everybody feels the need to associate with his own kind of people and be apart from outsiders. He wants to belong, but he also wants to be an individual. The New Economy provides all that is needed for forming the strata, groups, communities, circles, associations and so on which a finely structured society requires. All its industries work towards producing attributes and signs of differentness which aid division into groups. This enables each person to position himself in society, to find a niche corresponding to the level he is on and in which, accordingly, he is comfortable. Today's priority is to provide the individual with tools so that he can search out those with whom he will be at ease, and help him to associate with them. How can this be facilitated? The answer is to be found in the new technologies and practices of communication.

Web networks offer rich opportunities for forming associations. The fact that the groups are now virtual does not make them any less viable, nor any less real and useful. My view is that one of the most promising and revolutionary tools is group (collaborative) filtering. It has always existed, although under different names, but in social networks it has reached a new level of efficiency. The mechanism is part and parcel of a new way of ordering the world through groups, which is why it is so central in this book. Group filtering is a means for people to interact and find each other, to come together and cooperate for their mutual benefit. There are numerous examples of such fruitful associations functioning on different levels and different scales, from tiny niche communities of shared tastes and interests to very large groups indeed, including political groupings. The benefits people derive from coming together can be extremely varied, but collective filtering of information and material goods and services promises the highest return. It increases the efficiency of individual consumer choice while, on a completely different, institutional level, organising a link between production and consumption and providing the feedback mechanism any social activity needs.

Thanks to group filtering the individual acquires a new degree of freedom and society is far more harmoniously structured than previously. This is a means of raising the quality of life, since each person has the opportunity to find his own congenial microworld, something it is far more difficult to create in other ways. The costs on this path are substantially reduced by the new tools, institutions and business models discussed in this volume: collective filtering, unmediated links, post factum gratuity payments (capable of becoming an alternative to copyright), mutually regulated group behaviour, insurance of experience (cultural) goods, symbolic exchange without money (attention bartering), and trust advertising.

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