Information responsibility and financial risk:
The Internet bubble and other experiences

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For those who take an interest in information and communication technologies, the recent financial bubble which destabilised the sector built on these technologies remains an immense waste. Admittedly, this is not the first time that a technological innovation has led to speculation. Everyone remembers the numerous examples of such bubbles from speculation on tulips up to the bubbles constructed around 19th and early-20th century innovations, railways, radio, etc. However, all of these bubbles of varying importance occurred before the middle of the 20th century: for the first time in our careers as economists, we are facing a real speculative technological bubble whose effects on the real economy have been extremely serious.

The feeling of powerlessness in the face of the force of a devastating belief is the major memory we retain, the force of an often vague inconsistent belief which occasionally even shook our own convictions. Why did such a belief emerge, why did it have such force, why did it unfurl, how can it be avoided: these are some of the questions which we wish to examine.

The subject is vast and cannot be covered in a brief intervention. Multiple facets of this question have been tackled and debated, and when exploring it, we shall be obliged to leave aside the majority of these considerations to ultimately examine only a small aspect which we believe seems to have been debated less: what responsibility is borne by those who contribute to producing these beliefs?

**From beliefs to the voices which feed them**

Beliefs are born every moment; devastating beliefs are occasionally formed but generally remain locally contained, just like a windy zone luckily does not systematically degenerate into a hurricane and never into a global flood. The belief is both the action and the object,trust placed in an opinion which is held to be true, a deep conviction but which remains to be proven and which often motivates action. It is the opposite of knowledge, which emerges from a scientific approach, which seeks to state the truth. This caricatural opposition should be probed in greater depth¹ but this is not our purpose here: we must simply note that at a given moment, a multiplicity of discourses can exist relating to a dynamic reality where proofs of truth cannot be provided. This is the common fate of all hypothetical discourse and we are obliged to acknowledge that human and social sciences can present few irrefutable mechanisms (demonstrations) of proof. We therefore live with beliefs whose propositions frequently cannot be demonstrated, because they bring into play our freedom and individual and collective will.

We know the role which information plays from now on in economic theories. In a precursory text in 1936, Hayek wondered not about the reasons why people would make errors of judgement, but about the reasons why they were incapable of not making such errors, i.e. on what basis would it be possible for them to tell the truth, in this instance to correctly anticipate what would happen in the future².

Let us consider information here as a scrap of knowledge. If this knowledge relates to the current world, it may be submitted to a scientific approach. If it relates to a future world,

¹ For an investigation of this concept of belief, cf. the article on "belief" by Paul Ricoeur in the Universalis encyclopaedia.
² "Before we can explain why people commit mistakes, we must first explain why they should ever be right", Freidrich Hayek, Economics and knowledge, Economica IV, 1937, pp. 33-54.
which remains to be constructed, it then necessarily has something in common with a belief. We can view a given assertion as true, but we will find it difficult to prove.

For economists, this question is a major one. How is it that players’ anticipations (e.g. concerning a market) can coincide? If we consider on the one hand, Hayek tells us, all those who save to build their houses and on the other all those who produce building materials, how is it that we reach a balance between supply and demand at more or less a given time? This is the old question of the invisible hand and the rationality of agents. We know that to obtain a theoretical balance, the economist must postulate, apart from a perfect rationality of each agent who expresses himself in the supply and demand functions, a perfect knowledge of the other’s allocations and rationalities, which enables him to exercise his rationality without wrong-footing other people’s rationality. These are obviously necessary conditions which are impossible to fulfil.

On this basis, the question raised by achieving a balance transforms itself into the following: what knowledge must each agent have so that we can hope for a market balance? What division of knowledge should be promoted? And how is this individual knowledge to be constructed?

For the past thirty years, different theories propose models for constructing individual beliefs. Scientific truth is no longer obligatory: the belief which fulfils itself *a posteriori* will become true; the actions of economic agents (among others) operate mainly, not only on present states, but on the anticipations which they can have of future states. These anticipations can only be beliefs in the sense we have evoked, i.e. estimations held as true, which permit the undertaking of action in the hope that by the world conforming to these anticipations, the expected benefit from the action will be effective. Belief often implicitly assumes belief in mimicry.

We shall not expand on the debate which was held and is still being held on the question of beliefs, their formation and their distortion, and on the relevance of the concept of market equilibrium. It is merely necessary to emphasise certain mechanisms for the convergence of beliefs linked to social functioning (e.g. the formation of agreements), as well as the role of producers of knowledge and of those who transmit them, the media. Fashion phenomena illustrate these mechanisms well where a leader (an "authority") leads the market in a given direction in an ephemeral manner.

The person who makes the fashion bears a responsibility. He is generally not reproached for it and this quality is rather seen as being to his credit because the belief which he has developed is often verified. But those who have pretended to create a fashion and who have not done so and drag "believers" behind them who have wagered on this pretension are not easily pardoned. In other words, those who help to forge beliefs, either by producing beliefs or by having them circulated and disseminate them while adding faith, are judged according to the extent of the effective fulfilment of the promises carried by these beliefs.

A belief carries a promise that the actions which it triggers will produce a benefit, moreover regardless of its nature. This may be a financial benefit, it may be a spiritual benefit in the case of religious beliefs, it may a relationship benefit for example in the context of a belief in emotional mediation or otherwise. What is at stake then becomes the trade in promises, to borrow the title of a work by Pierre Noël Giraud. In the

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promises market, not all can be kept, if only because many are contradictory, but also because many promises are "inflated" to increase their persuasiveness. Some promises will be kept, even beyond the hopes placed in them, and there will be many which are not kept and will lead to disappointment and even loss.

A belief carries the promise that something will be fulfilled. This “something” may be beneficial, and the promise will then relate to a promised benefit, an advantage; but this something may be negative, and the promise then reflects a risk, harm or loss. In other words, risk is the negative promise of a belief. Furthermore, the same belief can mean a benefit for one person and a source of harm for another, a beneficial promise on the one hand and a risk on the other. In the context we are in it is important to highlight this dual aspect of belief, opportunity and risk.

Our question resides there. What responsibility is borne by those who produce promises? What relationship exists between this activity and the risks taken by those who subscribe to these promises? What is the relationship between the responsibility for producing information which creates beliefs and the financial risk associated with these beliefs?

Belief, promise and prophecy are three terms demarcating what is at play in certain forms of knowledge calling for action. Anticipating is necessary for acting. However, the action itself configures the future. Anticipation therefore supposes an estimation concerning the rationality of the other person and the knowledge which he has for exercising this rationality. Ultimately and this is what interests us here, a belief develops, generally all the stronger because it is collective, and fed by prophecies (statements about the future) by opinion leaders. This belief bears the promise of certain benefits or ill effects. Belief, promises and prophecies actually circulate, but do not emerge from nowhere: they are carried, fed, and even produced by physical or legal persons. Today these terms infer an excessive dissociation between what is said and its author, as if knowledge had an origin and life of its own independent of its originator. This is the problem of responsibility which we wish to evoke and why we shall speak of “voices” to qualify the sources of belief.

**Voices in the bubble**

We know how the persuasiveness of prophecies can lead to their fulfilment. The expectation of an agent A as regards the performances of an agent B can lead to the latter responding to this expectation. The forecasts made by the agents lead the latter to behaviours which *a posteriori* validate their predictions. For example, mothers’ perceptions of their daughters’ sports aptitudes lead the latter to conform to these. The theory of sun spots illustrates the role of beliefs: if agents believe that solar eruptions raise the prices of goods, at the announcement of such eruptions, to protect themselves against high prices, they will buy more than is reasonable and effectively raise prices: the prophecy is fulfilled. More seriously, an anticipation of an appreciation or depreciation in the value of assets (a currency, a security, etc.), as soon as it is shared, generally produces the appreciation of devaluation of the asset. Some have suggested that technical progress itself could in certain cases be related to self-fulfilling prophecies. The famous Moore’s law which states that the performance of semi-conductors doubles every eighteen months does not seem to have any technological foundation. The scale of the investment made by the companies concerned and notably Intel whose founder gave his name to this law, does not appear to be determined by solid economic calculations, but seems more linked to a demand for respect for this law which undoubtedly is by no means natural.

Here we are at the heart of what happened with the Internet bubble. The technical innovation which the Internet represented, whose development outside the academic and
military field dates from 1993-95 and results from the implementation of the HTML standard and the web browser, led to a certain number of positive anticipations accompanied by various promises. Following the miraculous flotation of Netscape on the stock exchange in August 1995, a certain number of prophets emerged who predicted and promised radiant futures. Kevin Kelly, the very media-oriented CEO of Wired, was one of them. Thus, in 1999, he announced two items of news relating to the "new economy": "The good news is, you'll be a millionaire soon. The bad news is, so will everybody else" and he concluded by announcing that "the market will fluctuate daily, but by 2010, the Dow will soar past the 50,000 mark". But he was not the only one, as was bound to be the case, and there would be many positive anticipations between 1996 and 2000, gradually overcoming the most sceptical hesitations.

Each technology potentially carries a certain number of beliefs in it, or rather, the economic agents are ready to give a large amount of credence to the promises which some people suggest for these technologies. Technology in itself does not bear any promise; generally speaking, voices express these promises because there are interests at stake. But, in most cases, the players’ efforts do not manage to fulfill the technological promises, because they are beyond the possibilities available to technology and the economy. But temporarily, they can experience the outset of fulfillment, which is not expressed in the performances of the technologies, but in the financial securities supporting them, because this is a sector where the self-fulfillment of promises is relatively mechanical in the start-up phase: Believing that financial securities will rise (or fall either) makes them rise or fall. In this balmy period, promises were fulfilled to a point where their inflation no longer made them credible or tenable, i.e. where the first failures and first losses appear. And the rising spiral pushed by self-fulfilling anticipations led to a reverse descent into hell which again was supported by self-fulfilling anticipations, in accordance with a pendular logic which only subsided with the friction caused by dissonant voices in a chorus of firmly anchored beliefs.

There were dissonant voices. It could even be said they were relatively numerous and of very high quality. We only wish to highlight one here to illustrate the fact that if it had not been listened to, probably no other one could have. This voice is none other than that of Alan Greenspan, President of the Federal Reserve Bank, the Fed, who was appointed to this post by Presidents Reagan, Bush, Clinton and George W. Bush, in an uninterrupted period from 1992 to 2004, the conclusion of his current term of office. As early as December 1996, during the presentation of a prize organised by the American Enterprise Institute, Alan Greenspan worried about the "irrational exuberance" of the stock exchange markets, a formula which would remain associated with his interventions. From that date on, and without failure in following years, he would recall the dangers which all financial bubbles bear for the real economy, notably because they induce a feeling of wealth among asset holders (the wealth effect) which leads them to spend more than the production system can supply and therefore inherently carries a serious inflationary risk. On 8 October 1997, before the House of representatives budget committee, Alan Greenspan again warned financial operators of the myth of the new economy, that of interrupted growth without inflation. On these dates, markets caught off-guard still reacted substantially to the President of the Fed’s interventions. However, these adjustments would be less and less pronounced and increasingly shorter in the following years. It is true that in each speech Alan Greenspan referred to a return of inflation which barely appeared, despite increasingly lively growth and ever lower unemployment. From the end of 1997, Alan Greenspan was increasingly criticised for his lack of clairvoyance and would be accused of leaving his domain of competence: "The White House itself little appreciates the fact that Mr. Greenspan spends time bringing

Wall Street down whereas the stock exchange rise, through the wealth effect which it brings, contributes to Americans’ feeling of economic wellbeing and therefore Bill Clinton’s popularity.6

In June 1998, in two speeches made at the Senate and then the House of Representatives, Alan Greenspan reiterated his reserves about the securities trend and assured his audience that "history tells us that there will be a significant correction in rates, because history is punctuated by periodic contractions in rates". The Dow Jones practically no longer reacted to these warnings. On 20 January 1999, before Congress, Alan Greenspan expressed satisfaction with the health of the American economy, despite the turbulence in the global economy (the Asian and then Latin-American crises which bound him to remain vigilant). But, the record levels on the Nasdaq (we were still far from the peaks reached in March 2000) worried him: "A drop in the price of shares would slow down the growth in spending, and a drop in stocks, particularly if severe, would lead to a substantial slowdown in demand" he then estimated7. He advocated moderate growth, believing that the economy, even when taking account of the gains in productivity contributed by the new technologies, was growing faster than it could in reality. On this occasion, he firmly rejected Bill Clinton’s proposal to invest some public pension funds in the stock market, believing that liquidity was already overabundant. During 1999, Alan Greenspan considered the inflationary risks lower and in a way took account of the effects of the technological revolution underway. However, he continued to warn regularly of a stock market correction.

On 23 February 1999, before the Senate Banking Commission, Alan Greenspan talked again of the markets’ irrational exuberance, and repeated that "stock prices are sufficiently high for the question of them being overvalued to be raised... A correction of stock prices could lead to a slowdown in investment growth. Moreover, a decline in the stock market could restrain household consumption"8. On 6 May 1999, during a conference organised by the central bank of Chicago, whereas the crises of emerging countries seemed to be mastered, Alan Greenspan renewed his diagnosis of the dangers of a stock market correction which he feared, although the Dow Jones was crossing the threshold of 11,000 points, only one month after exceeding the historic level of 10,000 points: "I will not say that we are in a new era, because I have known too many new eras in my career which have only passed", he said then9. The Dow Jones practically no longer reacted.

On 28 October 1999, speaking to a floor of businessmen meeting in Florida, Alan Greenspan allowed himself to be won over by the reigning euphoria and adhered to the effects of new technologies on productivity; he then believed that as a result the American economy could remain sustainably on the path of non-inflationary growth and had entered into a virtuous circle. However, the increasingly rapid rise in new economy stocks quickly led him to return to his warnings. At the New York Economy club on 13 January 2000, Alan Greenspan spoke out against the overheating of the economy which reached almost 7% of growth at the end of 1999, clearly above its estimated capacity according to classic models such as the sum of gains in productivity and its working population. He maintained that American households’ feeling of wealth linked to the continuing rise in stock markets "tends to cause a growth in demand exceeding the growth in supply", without however forecasting the time when this situation would no longer be tenable. He also argued that "there must be a limit to the extent that the

6 Le Monde, 10 October 1997.
7 Le Monde, 22 January 1999
8 Le Monde, 25 February 1999
9 Le Monde, 8 May 1999
available employment market can be exploited without pushing wages levels beyond gains in productivity.\textsuperscript{10}

On the eve of the stock market reversal (which would nonetheless only be gauged some months later), on 6 March 2000, during an economic conference in Boston College, Alan Greenspan powerlessly viewed the final explosion in securities prices and renewed his fears. At this stage when the hypothesis of the bubble became obvious, the President of the Fed was subject to crossfire criticism from those who reproached him for laxity in the face of speculation and those who reproached him for breaking the business cycle, of wanting to kill the hen that was laying the golden eggs. In practice, it was too late and if there was to have been a restrictive monetary policy, it should have been implemented massively from 1997, at a time when the international business cycle situation prohibited this in practice. From June 1999 to March 2000, five short-term interest rate rises were decided by the Fed, without any notable effect on asset inflation. Addressing independent bankers on 8 March, Alan Greenspan had denounced "lax standards, excesses and frauds", adding: "outside these risks, we notice a wider and more troubling tendency among many banking institutions to consider that the current conditions of our strong economy are no longer an exception and that they have become ordinary and expected. Lending is occurring on bases which could have serious consequences on industry’s capacity to cope with a less favourable economic situation. We are increasingly seeing loans being granted on the sole basis that current conditions will continue indefinitely and without asking how borrowers will behave in more stressful conditions. But, as we only too well know, the majority of doubtful loans are granted when the situation is good.\textsuperscript{11}

Thus, Alan Greenspan’s undisputed moral authority practically changed nothing during the course of events. His voice, increasingly criticised with the gradual development of the illusion of the new economy, was not heard. It was obviously not the only one\textsuperscript{12}, but if this one could not be heard, which voice would be? Faced with so many conflicting forces, the ordinary analyst felt particularly at a loss.

The voices which express anticipations likely to found collective beliefs just like those which fight against fluctuating movements created in this way are therefore crucially important. In other words, we could say that they bear a heavy responsibility. Our purpose here is therefore not to ask about the formation of these anticipations, of these beliefs and the self-fulfilling mechanisms which they generate, a topic dealt with extensively elsewhere, but to focus on these voices which give birth to them and to ask about their responsibility.

**Producers of anticipations**

They are many sources and many producers of anticipations in the economic world. And several channels through which these anticipations are transmitted to lend weight to the beliefs we discussed.

There is no intention here of carrying out an exhaustive analysis of these, just of citing some to illustrate our argument and to begin to appreciate possible responsibility. We consider the economic players concerned (the firms whose assets soar in value), financial analysts and the media in sequence.

\textsuperscript{10} Le Monde, 16 January 2000
\textsuperscript{11} Le Monde, 23 March 2000
\textsuperscript{12} For example, see the work Irrational Exuberance by Robert J. Shiller published in March 2000 (Princeton University Press).
The firms’ voice was essential for many reasons in the formation of these positive anticipations. Based on not very debatable components but interpreted in a debatable way (e.g. growth in data traffic), these firms largely gave credence to the idea that networks and market shares which could be created in the sector would substitute for the real world, with an almost certain advantage for the first entrant. These economic players proposed and supported totally unrealistic anticipations in view of the inertia of users’ behaviours, of the usefulness of several of these services and the operating difficulties which they did not fail to encounter (e.g. in logistic terms). They often implicitly reinforced the idea that the economy was a gentleman-of-leisure economy, supported by a captive consumer, consuming "new economy" services without restriction. By financing these projects, the financial world largely gave credence to these anticipations. It may be objected that the financial world was not misled and believed it was in a lottery system: betting on 10 numbers in the knowledge that 9 will lose is not bad business if the gain produced by the 10th largely exceeds the losses generated by the nine others: it is precisely here where this reasoning offended, as the possible gains were unable to offset the losses.

These anticipations were notably reflected in significant announcement effects, relating to the dates services were to open or the initial availability of revolutionary products, market shares conquered, turnover and profits expected and the always "reasonable" forecasts presented in stock market flotation documents. It is pointless supplying a sample of these announcements here given the extent they are in our mind, from companies believing from 1997 that circuit-based networks would have disappeared in a few years to those promising European cover for 3-G networks in 2002, without counting the shattering announcements made by dot.com companies between 1998 and 2001. In the software sector alone, specialist magazines hunt each year for vaporware13, announced products which end up not appearing and a famous list of which is published at the end of each year by the magazine Wired.

These announcements could be intentional (to generate an attitude of expectation in a market where a competitor was prompter – and in this case, to place a certain "emphasis" on the product’s qualities to induce this expectation) or unintentional (due to unanticipated difficulties, but which we find difficult to believe). In a way, industry largely contributed to feeding the anticipations which brought it to the skies, but then hastened its fall.

Once triggered, this mechanism feeds itself in a circle which will be considered virtuous or vicious depending on the point of view where the observer is placed. In practice, any financial value enhancement contributed by an anticipation of goods supplied judged positively correspondingly leads to easier access to the financial market which reinforces the value enhancement. The announcements not only have the effect of generating expectant behaviour in markets to combat a competitor, but also and particularly in a speculative period to drain equity towards the company’s business. This faculty took on caricatural proportions in the Internet bubble. It was sometimes enough for a CEO to mention the fact that his company was opening an Internet service (at often an unspecified date and with often very imprecise modalities) for its stock price to gain several points during the next trading session. Vivendi Universal’s announcement in June 2000 of the creation of the Vizzavi portal with Vodafone, limiting itself to a PowerPoint presentation messaging current anticipations in the right direction, enabled the parent companies to reap an astronomic gain in value in a few days, thus giving a simple presentation a yield which knowledge could never have produced as rapidly!

13 In French, "fumiciel".
How is it possible not to play on this facility? When are the limits exceeded? What CEO can allow himself to step aside from a game like this, a refusal which very quickly places him outside the game? Whatever way the problem is looked at, it is clear that when a belief develops, we cannot behave as if it did not exist. We cannot adhere to it intellectually, but acting against this belief whose prophecies have a strong tendency to fulfil themselves is generally suicidal. What is worse, it is generally necessary to feed the belief so that the expected anticipations gambled on actually do fulfil themselves. This is the well-known phenomenon of magic chains, notably financial pyramid schemes, which automatically collapse at a certain stage of development. This phenomenon was of particular importance in Albania in the 1990s which saw the establishment of a system of very highly-paid deposits invested with these pyramids which could only honour the deposits by finding new deposits, leading to a race forward which would immediately reach its limits on the day confidence collapsed notably because the potential for deposits had been exhausted: liabilities on the pyramids reached half of GDP and involved 2/3 of the population. The collapse of Albanian pyramids in 1997 generated trouble which caused the death of approximately 2,000 people and brought down a large section of the economy. It was difficult to emerge from the crisis and led to judicial proceedings against the initiators of these pyramids, who were therefore judged as responsible for their acts.

A financial bubble is of the same type as Alan Greenspan continued to emphasise for 4 years: by giving asset holders an artificial feeling of wealth, demand in the economy becomes greater than what it could produce. But whereas in Albania the pyramid was institutionalised via deposit institutions and a payment contract, in the case of the Internet bubble, it was the market which produced the pyramid: is this a fundamental difference which releases the parties involved from all responsibility?

But, before tackling this question, let us return to producers of belief. We have already identified some of the mechanisms for reinforcing beliefs in the relationship between the economic agents and the financial system. One of the perverse effects of these mechanisms is the introduction of growing laxity in company management: if the company’s value increases independently of its results, why assign importance to controlling costs? If even occasionally negative results reflecting heavy investment where future value is expected to be built push shares upwards, why do without such levers? We have thus seen some companies increase in value quickly because of their advertising commitments or IT expenditure, with “cash burning” acting as the indicator of future value enhancement. Financial communication then becomes essential and comprises one of the drivers of beliefs. It involves revealing that the company has been able to raise funds from venture capitalists, making it known that this had been spent, communicating that the firm had been able to buy such and such a resource considered essential (a manager, an asset, an input, a competitor, etc.): the level of this acquisition is of little importance, the problem is not the price of this access, but the fact that it is being accessed, and communicating these elements feeds the belief which increasingly supports all edifices. A crazy race for available assets then commences, feeding asset inflation, and generating bountiful fees for financial intermediaries: the mergers & acquisitions craze between 1996 and 2000 is there to bear witness to this: more than 300 billion $ from 1996 to 1998, more than 800 billion dollars in 1999 and 2000. In five years, this was approximately France’s or California’s GDP for a sector which accounts for 5% of the GDP of developed countries at most.

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14 Cf. IMF analyses conducted on this subject (Finances & Développement, Vol. 37, n°1, March 2000). Similar misadventures made the front of the American press in the 1920s and remain in the collective unconsciousness under the name of the person responsible, an Italian immigrant (Ponzi scheme).
However, when the reversal arrives, woe betides those who had to pay for these assets in cash and not in paper. Because the wiping out of surplus values is then nothing more than the mere stroke of a pen. When the reversal comes, incredulity dominates. With the Internet bubble, the peaks were observed in March 2000. However, we had to wait for autumn 2000 for the markets to resign to considering that these were indeed peaks, and therefore admit that a speculative bubble was involved. The frenzy of purchases, and the production of favourable anticipations widely subsisted up to summer 2000. It is true that the stock market rise of 1996-2000 occurred with frequent reversals which were more or less rapidly wiped out. The reversal following the top of the cycle is thus often interpreted as an accidental hiccup on the path of the rise, and a certain period is required before analysis becomes a necessity. However, the real economy is frequently experiencing the consequences of the overheating already and the players perceive this in their accounts. Refusing to accept the evidence, the most vulnerable are then tempted to hide the real facts through accounting artifice not in the hope but in the certainty that this financial cavalcade will be rapidly wiped out by a market recovery. This vulnerability is correspondingly stronger as management laxity becomes embedded in the company.

Thus, we arrive at the falsification of financial information from an “information” contribution to beliefs. The examples are well known, notably those which have led to trials: Lucent from the summer of 2000, Worldcom, Qwest, Tyco, Adelphia, Xerox, Global Crossing etc. and naturally, although it does not belong to the sector studied, Enron, of which we can practically say that it alone built a tailored speculative bubble propped up by an ad-hoc financial construction.

In the face of the economic players themselves, the financial players’ “responsibility” has to be pointed out. We saw that their deeds, their financing of the speculation, were their contribution to creating this belief whose fulfilment was as necessary for them as for others. Financing, not only means making a direct contribution, but also leading savers to contribute their savings to the sector on the basis of partial and occasionally partisan information.

Today we can no longer count the number of cases launched by unhappy savers who, believing in their advisers, invested in companies caught up in the bubble and consequently lost significant amounts, both in the United States and Europe\(^\text{15}\). Nor can we count the planned or actual suits taken by companies floated during the bubble who accuse their advising banks of lowering their flotation prices to enable their investor clients to make substantial capital gains. And the cases taken against financial analysts, who advised their customers for years to buy securities which they also believed were not solid, have not finished generating conversation, such as the suit implicating the large New York merchant banks led by the New York District Attorney, Eliot Spitzer.

Judicial proceedings are underway against intermediaries accused of unreasonably encouraging risky investments, against company directors accused of divulging deceptive or false information, against analysts suspected of mixing the interests of their firms with those of the companies analysed. The voices who supported the beliefs, those who subscribed to them and those who did not show independence are therefore forming the subject of demands for compensation: those who bore the risk are claiming compensation for the loss caused from these players.

Thus, even if we know that over time anticipations cannot be fulfilled, the more they are developed, the more they are fulfilled temporarily, the more the player can gain in this

\(^{15}\) Some even died, pushed to suicide by the scale of their debts once the bubble burst. This was the case of Fred Abramson, a Silicon Valley executive and former teacher at Stanford. Cf. http://www.siliconvalley.com/mld/siliconvalley/news/local/2745994.htm
game once he knows how to leave at the right time. But, there are several losers in the end. When the promises market disconnects from what has given birth to it, when, with so many signifiers becoming independent and losing all reference to what they signify, with the promises and beliefs which carry them only validated relative to each other, there is a good bet that we are entering into a game where jokers are wild.

**Responsibility**

In a situation of this type, several levels of questioning are necessary. Was there a loss? If yes, can we identify a responsible person?

All of these questions are difficult to examine. Let us take the case of a financial loss suffered by a small shareholder. The intrinsic quality of a share is to have a fluctuating value listed each day on one or more stock exchanges depending on the volumes of supply and demand. The real loss is a function of the date of acquisition and the level of the price on the valuation curve. The level of the loss or the reality of the loss cannot be arguments which can be selected for qualifying a loss. Even if of a major size, it is difficult to view the loss as the sign of a fault because it is consubstantial with the product.

The problem then becomes a question of deception concerning the product. Deception on the part of the seller who assures credulous customers that they are making a risk-free investment, deception on the part of the listed company which falsifies its data, is fraudulent or makes judgements which it knows are incorrect concerning the situation, deception on the part of analysts and another advisers who offer advice which contradicts their deeply held convictions. A twin question then arises:

- of showing that deception has occurred, i.e. a will to create an error
- of identifying the person responsible for this deception

In the market of promises which have broken all links with their reference, the value of a promise is merely relative to the values of the other promises: there is no further intrinsic value. The definition of a deception therefore assumes a return to an objective appreciation of the promise and can only concern a low number of promises. Deceptions which are sanctioned by law are generally called frauds. Reflection is therefore initially required to detect deceptive behaviours which are not currently punishable, but which we believe should be. All reflection on the recasting of legislation on corporate governance or financial intermediaries, which was launched after the Enron scandal, therefore comprises a colossal construction site. Because we necessarily enter into the moral domain and that of each entrepreneur’s margins of manoeuvre. What is certain is that the cursor of governance standards must develop rapidly, because some risks induced by the propagation of beliefs are no longer socially and morally supported. This amounts to saying that certain voices (or moreover the absence of voices\(^1\)) should be responsible for what they say or do not say in certain conditions. Thus, in many countries, pyramid schemes are categorised as fraud because the system only works if there are an infinite number of players, which cannot be the case: there is consequently deception about the possible gains, which can only exist for the first levels of the pyramid. While Ponzi had institutionalised his pyramid, in the case of the related Internet bubble, it is the market which played this role. No one can thus be designated responsible, as no voice alone had the power to create this phenomenon. It is their convergence which produces the self-fulfilling effect of anticipations, a convergence which is notably ensured by the disseminators, whom we know currently reject the role of censor, considering themselves as merely a channel which makes it possible to balance the voices expressing themselves.

\(^1\) For example an auditor who has not denounced accounting misappropriation.
Several recent affairs have pointed out this type of responsibility in which the media reported facts, statements or estimations which harm a company. This damage can lead to a stock-market collapse, the closedown of sites or the insolvency of a company. Inversely, a company experiencing difficulties which an external voice (e.g. an analyst) highlights is often tempted to stifle this path by threatening judicial or other forms of retaliation. Enron practised this type of manipulation. It is therefore up to the justice system to decide these responsibility cases in often contested rulings because they can go as far as silencing a particular voice whose independence caused a problem.

But, we also know that looking for responsibility among disseminators is a threat to freedom of expression as well as for protection of privacy. Debates held about Internet Service Providers (ISPs) are there to remind us of this. Can an ISP be held responsible for the arguments put forward by the people to which it grants access? Can it or should it act as a police force? We remember the outcry in the United States generated by the ruling by a French judge ordering Yahoo to close down access to sites propagating holocaust-denial and nazi ideology. Just like the ruling handed down by an Australian judge on his capacity to judge a libel published in the United States. Inversely, ISPs supplying the identity of their customers assumed to be violating copyright by virtue of their activity on P2P (Peer to Peer) sites, for example, to the holders of these rights is judged with severity in Europe.

The search for responsibility is therefore not solely a question of relating the promises to the voices which transmitted them, it entails attempting to evaluate the promises themselves, to estimate their deceptiveness. Simply handling this problem and how societies seize on these problems would mean entering into a debate which exceeds the framework of this intervention. No one can doubt that on both sides of the Atlantic, this question is not totally treated in a similar way depending on the consideration given to freedom of expression. Making voices responsible actually entails threatening them with sanctions if they commit frauds (in the sense of punishable deceptions). This therefore assumes a legislative statement of what is fraudulent, which will curb freedom of expression. We merely have to consider debate on slander, reprehensible arguments (e.g. incitement to hatred and violence), on arrangements to censor work… to appreciate how much these are sensitive topics and moreover extremely swaying. Such debate occurs periodically in all societies: in the French context, we remember the debate generated by the publication of the work "suicide, user guide" which led to specific difficult-to-apply legislation at the end of the 1980s.

Each society makes its choice between prevention and cure according to its assessment of the risks linked to the propagation of opinions. It is well known today that the struggle against sects is not envisaged in the same way depending on the countries concerned (Germany and France have a restrictive policy which the United States is combating for example) just as the struggle against communism was not envisaged in the same way a few decades ago, with very restrictive legislation in North America which would have been unthinkable in the European context. The judgements which a society makes of the relevance and noxiousness of beliefs therefore determine its position on the prevention of the risks associated with these beliefs.

Gauging beliefs therefore also involves gauging the risks which they bear, which are the obverse of promises, i.e. dealing with promises also means becoming involved in the promises market. Beliefs bear a risk which itself forms the subject of beliefs. It is

17 Cf. [http://www.juriscom.net/txt/jurisfr/cti/yauctions.htm](http://www.juriscom.net/txt/jurisfr/cti/yauctions.htm)
19 Verizon versus RIAA case, concerning surfers who are fans of P2P sites such as Kazaa.
inherent in representation systems for them to only fit together in this way. The concept of risk is therefore also eminently subjective.

**The relationship between the producer and his products**

Is the judgement which we make on promises an arbitrage between promises as we have just referred to, an appreciation of possible deceptions carried by the promises, or is it not ultimately a judgement on those who emit and transmit them?

We shall have to go into greater depth on the link which unites the producer and his promise. The history of the market economy is the history of the rupture between links uniting the producer with his products. By establishing rights of ownership over products and by organising the transfer of ownership from a seller to a buyer, the market tends to break all of the links which united the producer and his product.

Let us go a little back in the history of societies. If we return to primitive societies, man’s relationship with things is quite different. The link between a person with power and his things is barely related to our concept of ownership. Goods are somehow a part of the person himself and they almost share the same spirit. On this basis, the question is of knowing what is alienable from what is not, in other words, can a person tear away what he places in circulation from himself personally? This dialectic between giving and keeping is essential: "In a society where in the final analysis all relationships are personal relationships, Godelier tells us\(^{22}\), where there are no written contracts and all commitments are public, ownership necessarily presents itself as an attribute of the people themselves and ownership relationships as direct or indirect relationships between one person and the next".

A thing is often given without being really alienated by the giver, because "it carries with it something of the giver’s being, his identity"\(^{21}\). Its reality is intangible: "its contains ideas and symbols which confer on the object a social force, a force which individuals and groups use to act on each other, either to establish new social relationships among themselves or to reproduce old ones"\(^{22}\). In this sense giving is to produce an alliance relationship, to create interdependence. And what is called the counter-gift is especially not a cancellation of the debt, but a deepening of this alliance relationship: it is giving again and not giving back, rendering.

Ultimately, what circulates is merely a substitute for what does not circulate, whether this is human beings themselves or sacred alienable and immovable objects. At the limit, "there are no things any more, there are only people who can sometimes take on the appearance of human beings or things"\(^{23}\). Giving therefore has the aim of increasing the giver, because it multiplies him in a way. By placing the greatest number of things in circulation for the longest time possible, he accumulates debts to him and enhances his value correspondingly through this debt. Circulation is not "free". It should be noted here that what is given is not uniquely material: it can be a "dance, a magic, a name, a human being, support in a conflict or a war", the domain of the donatable largely exceeds the material and is made up of everything which can be shared, makes sense, and can create obligations, a debt, among others". In this respect, it should be held that the ubiquity permitted by today’s technical networks is not a new concept: ubiquity is already present in the oldest societies, because by circulating objects which are a part (partis) of himself, an individual (his spirit, his essence) is consequently present simultaneously in all the

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20 Maurice Godelier, L’énigme du don, Fayard, 1996, p. 127
21 idem, p. 61
22 idem, p. 93
23 idem p. 145
locations where these objects are located. The individual then merges into the social reality.

Man’s slow reconquest thus progresses via his alienation from the “charge” of his origins, a necessary re-estimation of the sacred. Freeing an object from its imaginary and symbolic charge, unbinding the object and the subject, is the programme of the trading economy which is gradually extending its markets. Mauss insists on the fact that in many contexts, "it is necessary to detach the item sold from its vendor", as in certain practices in ancient France where it was necessary to hit the item sold (e.g. a beast) to free it from the link which it had with the seller. For example, H.J. Martin tells that in Mesopotamia, the seller of a plot of land handed over a sod to the buyer or broke it by throwing it on the ground as a sign of relinquishment. In China, the vendor keeps a “sort of right to cry over his asset” throughout his life which gives rise to “moaning bills” which the seller hands over to the buyer. Liberating the partners from this link of mutual recognition thus forms the history of economic exchange. It goes hand in hand with the detachment of things from people, with the transition from the animated item to the held item. In Roman society, Mauss explains that the thing (res) originally would not have been "the brutal and only tangible item, the simple passive object of transaction which it has become". Associating res etymologically to the Sanskrit word rah, gift, present, pleasant thing, Mauss estimates that the res must have been above all the thing which pleased someone else and it is always “marked on the seal with the family’s mark of ownership”. In the acquirer’s hands (the acceptor), it remains linked to the first owner and links the current possessor (nexum) until the latter is released by execution of the contract, i.e., "by the compensatory tradition of the thing, the price or service which will link the first contracting party in turn".

The contracting party (reus, originally a genitive of res) is the person who is "possessed by the thing" Mauss tells us, i.e. who can become the guilty party, the person responsible if the contract is not respected. In this sense, a gift is comparable with a wish, a promise to do something if a request (to someone else, to a God, to oneself, etc.) is fulfilled: like a gift the wish creates a link; each leads to an obligation (being obliged) and damnation if the obligation is not respected. Unbinding the contract from the essential relationship which gave birth to it therefore forms the course of events. In giving, the object is a talisman, marked, a carrier of the magic of recognition, and therefore of happiness and the pleasure of being. In a modern transaction, the object is merely an inanimate thing: for its part, the contract still ties the parties but in an increasingly supervised manner: becoming unbound from it is not inaccessible. Money gradually represents this immediate compensation which enables the transfer contract to be “voided” (emptus) of its obligations.

Economic history is therefore firstly the history of this uncoupling of the given, transferred thing, from its object, the contract, the reciprocal obligation on parties. The history of exchanges is therefore related to the history of humanity, to this progressive differentiation of relationships and then of relationships from the things which signify them. We are accustomed to seeing money as one of the first stages of this process. However, we believe it is equally fundamental to emphasise the importance of writing in the transmutation of values which we have just evoked: from the value of the rank of the giver to the intrinsic value of this gift. As such, marking the object means detaching it from the giver, giving it its own signifier. Trading society thus gradually gave an independence to the objects which it integrated into markets, detached from their givers, freed from the relationship which they instituted, thus creating an "objectivised" relationship, to use the term which summarises this operation today.

We view this relationship between the being and what he produces, what he places in circulation, as of fundamental importance, and very particularly in the knowledge
economy. To what extent can the market economy detach the product from its originator? To what extent can the market economy re-close accounts among exchangers which the circulation of objects creates? To what extent can the producer shed his (at least moral) responsibility for what he places in circulation? Can ownership be shared?

These questions cannot fail to raise certain difficulties. In practice, what characterises the ownership of a thing (the interest of this ownership), is the capacity to exercise one’s personal will over it, to do what one wants, to consume it, to destroy it, throw it away, to give it, to show it, etc. and in an exclusive way (no one is entitled to exercise his will on my property without my consent). Then, a category of objects appears for which I can only acquire partial rights, which only entail the exercise of my will supervised by contract. This shared alienation has largely become the rule for current goods or services. This cannot fail to lead to ferocious battles on the legal principles underlying this sharing.

In primitive or ancient economies society dominated the individual who was ranked according to the benefits which he produced24. In the market economy, the individual takes precedence over society which promises him freedom and enjoyment. We have moved over to preferences for goods from social hierarchies. The values of beings are succeeded by the values of knowledge, and for our purposes, the values of beliefs independently of those who support them. Reopening accounts between individuals means re-asking the question of their rank, it entails re-questioning the value of products and promises on the basis of the value of those who exchange them.

Our modern economy no longer allows a total break between the producer and his product: each producer is becoming more and more responsible for the consequences which his products can have. The multiplication of laws to protect the consumer against all sorts of shortcomings and nuisances possible with goods and services will characterise our economies from now on. Cigarette manufacturers, asbestos makers, manufacturers of certain medicines… are currently encountering many liability suits. It is becoming ever more important to be able to "trace" the product from the producer to the consumer, so that inversely, each consumer can refine the producer of what he consumes (e.g. for foodstuffs): the link between the producer and the consumer is being rewoven. Carmakers must know the users of their vehicles so they can "call back" these vehicles to modify a given part which was found to be faulty. Obviously, the question of insuring these risks arises. In the health domain, public measures have had to be taken to tackle the risks incurred, e.g. following cases of contaminated blood. In the air transport sector, insurance companies’ inability to cover air risk following the terrorist attacks of 11 September 2001 also led the public authorities to intervene. Because, economic players’ responsibility can be increasingly committed even if there is no fault. Courts are ever more frequently adopting the view that loss leads to reparation even in the absence of fault, with the service paid for equating with a commitment on the part of the service provider to satisfy even if he cannot do so in deed. Thus, in the material economy, the producer’s responsibility is committed increasingly year after year, and can lead to its insolvency25. This in turn leads to commitments by the public authorities to avoid drying up the incentive to engage in enterprise. The recent example of certain medical professions in France threatening to no longer practice is there to show the keenness of these questions: a risk must continue to be borne by the consumer on pain of no longer allowing the practice of many activities. This is therefore a balance, whose moral, cultural and social components should obviously be sought by our economies26.

24 Cf. Partager ou échanger: les valeurs du lien et du bien, Laurent Gille, to be published.
25 Imagine what would happen to the radiocommunication industry if it were discovered tomorrow that it helped to spread a given ailment.
26 There is no risk free enterprise: "Life in its very essence is indissociable from risk, the simple fact of living is one in itself" Giarini tells us (Giarini Orio and Stahel Walter R., Les limites du certain, affronter les risques
It should be noted that the producer’s responsibility is not solely confined to losses. The supplier is increasingly required not simply to act as guarantor for the correct operation of its product, but also its correct use, i.e. the consumer’s effective capacity to satisfy the promised use which it bears. What we buy is increasingly no longer a product, but a result. Our entire commercial system is moving towards an ever stronger commitment by the production system, but also and especially by the commercial system, beyond a sale, towards a more global responsibility for the correct implementation of the product supplied. This does not solely entail palliating possible losses which could arise due to the product, but much more involves allowing the acquirer to maximise his utility: advice and user assistance are expanding to ensure consumer satisfaction. The product therefore carries an ever vaster range of guarantees concerning the promises raised by the product.

The culmination of this trend is made up of the commercial formulas described by Jeremy Rifkin in his work, the Age of Access. Rifkin insists on the permanence of the relationship which establishes itself from now on between the supplier and his customer. He tells us that recent centuries have been marked by the rise in exclusive property, confirmed by Locke, and which de facto primarily concerned tangible goods. This exclusiveness of ownership was obviously accompanied by an occasional transaction, which was merely the transfer of these exclusive rights. Yet, as Rifkin along with others explains, the capitalist economy is transiting from an age of ownership to an age of access, where (illusory and vain) possession no longer counts, but service. And what a person will increasingly buy is not a service, but a right to access a service, specified in time, space and functions. So, to caricature this development, Black & Decker would no longer sell drills, but holes! This new marketing reopens the accounts between suppliers and customers which capitalism had closed. Thus, we will no longer buy a car or an apartment: we shall access them via a long-term contract where the durable, real estate good or flow of consumer goods will be made available or even better will be served, just as a person buys a journey today.

A question is henceforth raised in the information sector, firstly in the domain of information products, but also increasingly in the information and knowledge domain: should producers of information goods, producers of information, the voices we have mentioned not be held responsible for losses they make cause, regardless of whether deception has occurred? Are the tangible and the intangible open to two radically different concepts of responsibility, notably in the name of freedom of expression. Is freedom of expression likely to be treated differently from the freedom to engage in enterprise which was constrained by the responsibility mechanisms which we evoked.

We know how much concepts of ownership and freedom are associated with each other. Access to freedom and access to ownership are actually linked in the common mind, as the potential to freely exercise personal will concerning our property. Hegel notes that "roughly speaking, personal freedom began to blossom in the past one thousand five hundred years thanks to Christianity, and has become a universal principle in at least a small part of the human world. Freedom of property, for its part, is recognised here and there as a principle, since yesterday, to put it one way". But, the material world is distinguished from the information world precisely in terms of the ownership aspect, via
a characteristic which economists call rivalry. To consume a tangible good, there is rivalry among consumers because this good can only be consumed by one of them. There is no rivalry for knowledge: the fact of accessing a given item of knowledge does not prevent someone else from accessing it as well.

Hegel thus notes that “the substantial reality of copyright and of inventor’s rights is not to be initially found in the fact that, by disappropriating a single copy, this right imposes the condition, through a free choice, that the possibility which then comes into the other’s possession to create, as it were, such products and things, does not become the other’s property but remains the inventor’s property. The first question, Hegel continues, is whether such a separation of ownership of the item from the possibility which is given with it, to reproduce it identically, is conceptually acceptable, and does not abolish full and free ownership”29. Thus, because its consumption does not involve rivalry, philosophers of the 18th and 19th centuries admit that ownership of knowledge remains with its producer and that those who access it only have a right of use, which moreover the mechanisms to protect intellectual property will defend. Europe, and notably France, developed authors’ moral right by following this philosophical train: for Kant, a work is only the expression of the author, in a way a part of himself, the breath of his spirit, just as a donated object in primitive societies is only a part of the being who puts it into circulation. In contrast, the United States is combating the very principle of a moral right to works through a reference to full and entire exercise of patrimonial rights which ownership of material goods confers.

What is a moral right? In European law, the author keeps a moral right to the work, whatever the status of the patrimonial rights. This right is inalienable, perpetual and imprescriptible, and includes three dimensions:

- a right of paternity and attribution: recognition of the paternity in all citations or attributions of the work
- a right of divulgation (right to inspect all dissemination) and right of integrity (adaptation/ modification, e.g. translation)
- a right of repentance: the author can at any time decide to withdraw his work from any dissemination (a right which is not recognised by the Berne Convention in contrast to the two first rights)

The United States has never had a moral right in its systems and struggles actively against this right which it views as very harmful to industrial groups which produce works, due to the resulting Damoclean sword which weighs on all productions, as the author can for example object to a given actor or a particular interpretation of his work even during the course of the production. Some authors nonetheless believe that via legislation on personal damages (Tort Law) or protection of personal privacy (Privacy Law), some of these rights are actually recognised implicitly, but not with the power conferred on them by the European moral right. As a sole exception, visual works (paintings, sculptures, drawings, art photographs and prints) have a limited moral right (during the artist’s life without a right to repentance) on the basis of the VARA (Visual Artist Rights Act) passed in 199030. This moral right does not exist anywhere for innovations protected by a patent.

We are therefore faced with a paradox: in the material economy where ownership has developed in an extremely strong manner, where the market has stretched the link between the producer and his product the most, we note the growing responsibility of the

29 In which case, Hegel emphasises, “it is up to the chosen will of the first spiritual producer to keep this possibility for himself, or to exalienate it as a value, or to assign it no value in itself, and to appreciate it with the single object”. Hegel, Principles of the philosophy of law, GF, 1999, p. 143.
30 Cf. [http://arts.endow.gov/artforms/Manage/VARA.html](http://arts.endow.gov/artforms/Manage/VARA.html) for more information.
producer, who is increasingly committed by the promises borne by his products, a promise of innocuousness, but also a promise of a result of use and a promise of satisfaction[31]. Inversely, in the information economy, where the work and knowledge have remained very tied to the producer, the latter’s commitment to promises relating to his products is almost non-existent.

Let us take the example of software. Licence transfer contracts (we note that there is no longer a transfer of ownership, just the transfer of a right to use a product which remains its owner’s property), as a rule contain clauses exempting the producer from all responsibility. These contracts which we are supposed to accept just by opening the packaging or click in a dialogue box at the time of installation (shrink- and click-wrap software licenses) generally release their producers from all significant responsibility. Not only do they not undertake to repair possible faults (bugs), but obviously, they do not make any promise concerning use and under no circumstances to pay compensation in the event of incorrect use. The Y-2K bug provided a good example of this.

<table>
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<tr>
<th>Standard example of a licensing contract (extracts)</th>
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<tr>
<td>6.2 <strong>The software is supplied “as it is” without any explicit or implicit guarantee of any type. In particular, XX Ltd does not guarantee that execution of the program will be uninterrupted or free of errors. XX Ltd does not supply any guarantee and does not bear any liability for the use or consequences of the use of the Software in terms of reliability, exactness or other items. You bear the total risks arising from use of the Software.</strong></td>
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<tr>
<td><strong>7 GUARANTEE EXCLUSION</strong></td>
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<tr>
<td>7.1 <strong>According to the most applicable law, XX Ltd denies all other implicit or explicit guarantees and conditions relating to the Software including but not limited to any commercial value, non-violation of third-party rights, suitability for a particular need or use. The duration of the legally required guarantee period shall be limited to the limited guarantee period set out above. You use the Software entirely at your own risk.</strong></td>
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<tr>
<td><strong>8 EXCLUSION OF LIABILITY FOR LOSS</strong></td>
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<tr>
<td>8.1 <strong>XX Ltd or any person involved in creating, producing or supplying the Software shall not under any circumstances be held liable for any direct or indirect losses ensuing from use of or your inability to use the Software and, especially, all losses of profits or loss of revenues, loss of information, computer breakdown, work stoppage or other damage, with this applying even when a representative of XX Ltd has been informed of the possibility of such losses.</strong></td>
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As regards information goods we therefore appear to be a good century behind what has appeared in the tangible sphere. Is this an anomaly or a specific feature?

**In the guise of conclusion**

Information goods and knowledge have specific features. We have seen the characteristic of non-rivalry of consumption which has enabled the information product to remain its producer’s property. Another characteristic is that of its difficulty of exclusion: once information or knowledge is made public it is easy to duplicate and therefore to distribute it. Non exclusion is built on non-rivalry. Excluding consumption is due to technical and legal arrangements which aim to protect intellectual property. But this difficulty of exclusion, which is not implemented for much information, enables us to understand the systemic impact which information can have. When broadly disseminated, taken up and duplicated, information spreads very quickly and can affect the economy and society

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[31] The slogan "Satisfied or your money back", guaranteeing a full refund, has today been taken up by a large number of brands.
Information responsibility and financial risk

profoundly if it is contaminating or gives birth to “erroneous” beliefs: there is a major systemic risk here which is perfectly illustrated by computer viruses.

In the traditional economy, a material product carries a risk which any purchaser accepts up to a certain point. An insurance system exists to spread this in the economy. Beyond this, the public authorities (i.e. society) assumes the supplementary risk which cannot be covered by the insurance system. In the world of knowledge, and knowledge which forms beliefs, risk is also present. Adhering to a belief and acting in consequence do indeed mean risking something, as the Internet bubble showed us. Acquiring software also involves risking something. However, the insurance system is very underdeveloped and the public authorities have hardly taken over, as the risk can be significant.

Education about and prevention of risk are a necessity in the material world. This is even more so in the world of knowledge and information goods, because no insurance system can guarantee the risks which can develop here: developing vigilance therefore becomes essential, a vigilance which is probably contradictory, because noxiousness itself becomes subjective. It is therefore necessary to grasp risks at their roots and not allow the development of explosive situations. We know that in the financial world where risk is similarly very high (the collapse of confidence in a currency can have dramatic consequences), values have to be regulated as far upstream as possible, which explains for example the importance assigned by the monetary authorities to not allowing inflation to run away. Nipping inflation, information risks or risks associated with a given belief in the bud undoubtedly infringes on freedom of expression, it means necessarily supervising financial information for example, it means punishing a given drift in expression which can generate dangerous beliefs and behaviours. It is up to each society, according to its control mechanisms, according to its cultural practices, according to its concept and aversion of risk, to determine how it arbitrates between the responsibility of its members and the risks which it agrees to bear.

We are therefore facing a market of promises which is no longer secured by the tangible economy, where beliefs clash, bringing promises and assumed risks with them. Many voices feed these beliefs, trying to lend credit to the promises and risks which they support. Some are not credible a priori, they are deceptive and should be prohibited. But the majority cannot be refuted a priori. Everyone subscribes to them or opposes them. Financial bubbles illustrate the monetarisation of these promises wonderfully. At another level of thinking, bets in games form another form of monetarisation of beliefs, promises and risks. Should our societies develop these instruments which ultimately are merely instruments to spread and distribute risks? Should we develop what our economies have largely implemented in the material world in the intangible world?

We believe that it is not possible to claim full ownership of products of the products you place on the market and waive all responsibility for the effects of these products. There is an anomaly which can be explained by the scale of the damages which they can cause; and therefore by the insolvency of their producers, but which deserves deeper reflection. In primitive economies where a similar relationship existed, the individual’s moral responsibility was committed, not in the sense that we understand today, but because the individual’s social position, his rank in society, in other words, his value in the sight of others, prohibited him from any denial of responsibility: he accepted the burden of his rank, in other words, the social responsibilities borne by persons of his status. His honor and prestige were set at this price.

The market broke this link between the voice and the discourse. A person can express irresponsible arguments in good faith, because, due to the fact that society no longer ranks individuals according to a social order, we do not pay for this irresponsibility. We knew that the risk of physical damage was the price of the freedom to engage in
enterprise. We also know that the risk of intangible damage is the price of our freedom to believe and to think. Admittedly, we can extend the field of deception and regulate the responsibilities borne by voices via an increasing encroachment on freedom of expression. But, would it not be better to give voices back their moral and social responsibility, in other words, re-open accounts in our societies which the market has gradually closed, come back to a social judgment of voices, and penalize their irresponsibility by their downgrading in the hierarchy of honor, prestige and probity. However, this assumes giving the social dimension a scale which the market economy has difficulty in granting. Reconciling individual freedom and social legitimacy remains one of the greatest challenges of our era. In my view, this is the price for making voices responsible without censuring them.