The book shows how a combination of both social anthropological and social-psychological approach can be used to penetrate the phenomena "technology and IT/ITC" as an influential part in the society. A quite extensive summary in English - based on the final chapter of the book - is intended to act as a "highlight" of the main points.

SUMMARY IN ENGLISH

The Grammar of The Hype
**digital information technology - IT - in retelling as myth
its experienced reality and in scientific analysis**

or

**the IT-hype in the years prior to and at the turn of the millennium
waiting for the next hype and the next, and "next"...**

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Content:

Introduction

My thesis/book focuses on a particular "hype" and the relationship of all that it might have involved as a force capable of influencing society at large. What is implied here, then, is a new type of technology – digital information technology - IT or ITC - that was generally introduced in the years immediately before and at the turn of the millennium. My thesis could also be applied, I think, to other situations of a similar kind that, from a social point of view, might be characterized as hypes or "periods of irrational exuberance", but I consider, nevertheless, that what is usually referred to as "IT within information society" is an excellent illustration of such phenomena for contemporary times.

Consequently, the concrete case discussed here should be understood as an ethnographically based example of what the so-called IT hype meant from different mythological perspectives. The thesis considers the experience and significance of working with digital information technology with regard to social interaction at various workplaces – also in terms of those possibilities for symbolic interpretation that might have occurred. Furthermore, the thesis aims at discerning what different aspects of the IT phenomenon that were symbolized within our society and the possible significance of this for some of its users during the principal phase of "irrational exuberance" – the years immediately before and at the turn of the millennium.

The so-called IT hype as the focus of my thesis

I shall now present a preliminary and concise definition of the hype considered as a social phenomena where it may be compared to a state of euphoria, a kick, for a large number of

social actors – a state quite beyond the ordinary that also harbours clear visionary qualities. Hypes bring about dreams and hopes for the future that may be associated with specific sequences of events, "what actually goes on within society", and could thus furnish a kind of developmental "overdrive" to certain tendencies of similar historical specificity. Hypes may often arise in response to national, international or global expectancies and/or guide lines connected with different religious and political ideologies or, as in the case investigated here, when a new technology is introduced – IT – but it could also emerge, I argue, quite spontaneously on a popular basis.

Hypes may harbour various "-isms", all the way from nationalism to internationalism, traditionalism to modernism, etc. Combinations of ideology and technology with particular social conditions are, of course, are always a possibility to reckon with, precisely as market forces, PR and manipulative commercial strategies underpinned the "euphoric tendencies" of the IT hype. Even so, I claim that a critical evaluation of any hype can only be fully accomplished when these tendencies have subsided and become less prominent.

My preliminary definition of the "hype phenomenon" is now completed. However, I return to the issue in the final chapter of my thesis - also in this summary in English.

Hence, when summarizing my thesis below, it is first of all a question of examining the IT hype from the perspective of social anthropology as based on its mythological properties.

IT between myth and reality
Another way of expressing the "point" of this heading is to say that myths often form part of the understanding that

different social actors may have of reality and that it frequently is difficult to discern their individual elements when they are communicated by means of narratives that flourish within society. An important aspect with regard to digital information technology is that it consists of "ones and zeros" contained within swiftly transmittable signals that make possible various digitally regulated functions in everyday life. Another crucial aspect is the particular context within which information technology operates and where it constitutes a concrete force capable of influencing a number of everyday activities – practically, socially and mentally.

Such is the situation, I argue, when *IT, its present and potential future utilization, the different ways of comprehending the influence of digital information technology in everyday life* become the principal issues of various fairs, exhibitions, presentations, political announcements and analyses, that is, different kinds of events and statements focusing on IT.

I am quite conscious that my previous argument might be considered over-simplified. Of course, these events and statements are the creation of different actors who participate in a variety of social fields involving relations, ideas and intentions that may often be quite well-defined and well-organized. My point is the following: the IT hype, when it happened, was an occurrence in our society that was already "on its way". Digital information technology - IT - it had and still has a real potential in terms of its properties and functions that are as yet not realized, but may be so in the future. These properties and functions are handled more or less consciously by different actors in our society in accordance with the following principle: some people are true

believers but not everybody and neither belief nor doubt is a permanent social condition from a perspective laying stress on historical continuity. In other words, the "parameter" linked to the mythological character of IT society is how involved the social actors are in its cosmology when it comes to interpreting, comprehending and visualizing information technology. It is, in other words, not a hype for all actors in society even during such times of irrational exuberance, but it still exists as a kind of resource when on its way.

From a historical perspective, it is possible to discover similar traits as those characteristic of the IT hype, that is, when a specific branch of technology and its implementation indicate a breaking point, a division between "the old and the new" within a particular society or epoch.

"Futurism", as a social movement, originated in Italy during the first decades of the 20th century and then spread to other countries – mainly in the West. It was an artistic campaign that encompassed many fields of activity, from painting and sculpture to theatre, music, film, etc. Futurism was a reaction against everything of the past and conforming to existing social and mental patterns. Generally speaking, those taking part in the movement defined themselves as being antagonistic towards all established structures or, differently stated, a lot of prevailing modes of social existence. The futurist also brought into focus new values of a more individualist and subjective nature through being anti-traditional, anti-political and anti-musical at concerts that consisted simply of silence. Various events and activities often evoked a counter-structure as an alternative to the established order, that is, musical instruments were sawn apart instead of being played on, existing pieces of art were

destroyed in the process of creating new ones. In such ways, the futurists attempted to break down "existing boundaries" when searching for new modes of artistic expression and trying to accomplish a synthesis between architecture and technology, etc. In other words, futurism was an issue of transcending and exploring boundaries. Machines and technological development were understood as a source of power in a state of transcendence involving speed, size, quantity and height. Such properties often represented both means and objectives. Especially the operation of machines was considered in those terms (L.Mumford 1970. R.Humphreys 1999. G.Qvarnström 1973).

However, I did not experience the IT hype fully that dramatic and spectacular during my fieldwork in the city of Karlskrona and the southern part of Sweden. Neither, did it stand in any real opposition to the goals of our society as far as the development of digital information technology is concerned. Nevertheless, computers, the Internet as well as mobile telephones functioned as clear signs of a "breaking point with links to the future" – in the years immediately before and at the turn of the millennium. During the IT hype, people who were in charge of the technological development of computers, IT and services on the Internet often became themselves intimately associated with "the future".

Neither is this situation a new phenomenon. When I was talking to engineers and technicians – while employed as a young machine-man at the beginning of the 1980's – they happily told me about their own work in manufacture and process industry at the end of the 1950's and throughout the 1960's. For them, this was a period when technological development at their workplace and various considerations of

the future were closely connected, a situation in which they themselves, on instrumental grounds, also felt deeply involved.

In the thesis, the phase of the IT hype is illustrated through a guided tour of an IT fair in Karlskrona in November 1999 and some exhibitions focusing on technology and IT in the years 1999 and 2000. Furthermore, I give an account of lectures and presentations from the SNS conference – SNS or *Studieförbundet för Näringsliv och Samhälle is* a Swedish organization for promoting entrepreneurship in society - held in Karlskrona in September 2000.

The above-mentioned events also communicated ideas about IT as a social phenomenon and it is certain of these ideas that I discuss in my thesis – ideas of a mythological, imaginary character, as they often provided an extension of the thoughts concerning technological development of that time.

BIT - 99 – an IT fair held in Karlskrona in 1999
The philosopher Martin Heidegger (1997) argues that technology forms part of a continuous activity characterized by a likewise continuous endeavour to overcome the limitations of the human species. Based on his understandings, I consider the "instrumental form" important, that is, when the implementation of a particular technology is leading to concrete and applicable results that, in turn, persistently breed new objectives.

According to my understanding of the IT fair "BIT –99" in Karlskrona, the instrumental form is crucial and expressions like … *Personal Capabilities – personal aptitudes and personal development … quick ways of finding the right person … specifying one's demand profile … focusing on*

user benefits ... do you have an idea, come visit us ... we try to exceed the expectations of our customers, we share intelligence and think in boundless terms ...individual competence, a software program that pinpoints the ... competence of the employee ... developmental plan for the individual ... accompany the various messages flourishing at the fair, while answering questions mainly of an instrumental nature according to the formula: "We are representatives of the new technology, we demonstrate how to use it and, when it comes to employ it, you should fill the new technology with its contents".

When myths are formed, it becomes crucial to incorporating people into their narratives. In public situations, however, this has nothing to do with making reality invisible, but rather with rendering it more accessible and explicable from the perspective of the dominant interpretation. The *symbolic form* realized at the fair may–from my reading of philosopher Ernest Cassirer (1996) – in its pure state be considered tantamount to *linear development,* which, then, becomes linked to an argumentation by means of words, texts and images that represents IT as a source of progress within very many spheres of society.

The SNS conference – Karlskrona in September 1999
Also when it comes to my understanding of the SNS conference am I inspired by Cassirer and his manner of crystallizing the symbolic forms of various phenomena in society. In the case discussed here, I believe that, as based on the statements of some IT consultants, we may derive the symbolic form from words like *... the international market ... motive powers ... good ideas ... broadband ... E-learning ... Internet portals ... interactivity ... online ... efficiency ...*

competence development ... and that all of these key terms could give rise, in various combination, to a large number of narratives, depending on what substance and values are "contained" in such narratives.

The gtm exhibition, Karlskrona 2 and
1000 år av framtidstro

All the exhibitions, *gtm The Global Tendency Machine* October 1999, *Karlskrona 2* November 1999 and *1000 år av framtidstro* July 2000 - in English "1000 years of belief in the future"- held in Stockholm, have that in common that they extend the development of information technology of the day into visions for the future. As for the *gtm* exhibition held in a mountain shelter in central Karlskrona in October 1999, the issue was to portray ideas and visions where IT represents a phenomenon that dissolves previous boundaries, set by technology as then existing in its functional shape. The visions and their world of associated ideas at the *gtm* exhibition included anything from IT controlled robots designed as insects, human-like figures created as computer programs *for* a mobile existence within a global world order.

In November 1999, I partook of the exhibition *Karlskrona 2* at Blekinge County Museum. The exhibition consisted mainly of a computer program illustrating the idea of virtual and interactive communication – where the actual inhabitants of Karlskrona were supposedly in contact with their virtual counterparts in an equally virtual Karlskrona. Customary patterns of thought and social habits are, on the basis of this, assumed to be questioned and rearrange more easily than previously, since it becomes much simpler trying out something new with the aid of IT. Hence, from the notions connected with *Karlskrona 2*, the process of knowledge and

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experience also turns into something that we can attribute to computer programs *and* communication between "the virtual and real".

The exhibition *1000 år av framtidstro* at the Nordic Museum in Stockholm in June 2000 indicates that the future not only comes into being but is something that we create ourselves – in our capacity of active social agents. Fascinated, I partook of the "intelligent refrigerator" with a built-in computer screen, which, apart from preserving food in the usual sense, was also considered a future station of communication for the whole family. According to my interpretation, the refrigerator marks the idea of constant accessible as accomplished with the aid of IT, quite independent of the geographical distance between family members. The refrigerator indicates, too, how an innovation and artefact of the past may become incorporated into some future digital existence.

The myth and its appertaining reality

However, myth and reality stand in a complicated relation-ship. As social actors, we contribute to a situation that both contains the myth and the very reality of which it forms a part. Not least are we doing so in terms of those hopes and dreams that we often ascribe to new kinds of technology. Yet, the relationship of myth to reality is also the means on the basis of which we interpret our personal existence as it provides us with guide-lines, a conceptual framework that helps us function properly in everyday life – even when it comes to practicing a new technology, such as IT, in the case of my thesis.

In the second chapter of my thesis/book – *Myth* – I discuss various ways of "opening up" a socially based narrative for demystifying purposes, that is, to critically examine what is in fact myth as distinguished from its "appertaining reality". In that chapter, I describe how it may quite naturally become a question of investigating which actors are favoured economically, socially and politically by their ability to articulate various types of narratives. Here, too, the problem of studying how the implementation of a new technology would frequently *both* form part of pre-existing structures and occurrences *and* create a new course of events as well is discussed. This, in turn, may result in a more or less public and fictive way of retelling "what actually happened".

Consequently, it would seems possible also to penetrate "social narratives" through questions that, in a myth, often appear in the guise of expectations and/or ready solutions for various scenarios as they are envisioned by different actors – in our case through "the myth of information technology". We may, for example, refer to statements implying that communication via e-mail will promote democracy by making political officials at national and international levels more available to the general public, an idea which becomes quite preposterous when such statements are confronted by the simple question: How? In a society consisting of millions of people using e-mail and the Internet, that is, potentially millions of individuals who are communicating very rapidly among themselves as compared to the relatively small number of politicians who have other duties apart from sitting in front of a computer this does not seem a likely development.

What remains, then, is an imaginary narrative, a myth, incarnating the contemporary political project, above all, within the context of information technology – even though IT and various aspects of democracy may very well work to each other's advantage. The Internet and e-mail then become one additional forum for private and public discussions of a "political nature", but not, however, in accordance with the myth's depiction. As for the analytical method used here, I have benefited both from Cassirer's (1996) reading of the "symbolic form" and Castoriadi's (1986) understanding of the "imaginary" as an prominent social force. In other words, it becomes a question eventually of determining what "properties" that are attributed to certain "instruments" in society and then to link these properties to various aspects of the actual conditions existing there – socially, mentally and economically.

A third way of unmasking the myths associated with information technology would consist in examining how this particular technology might function in the ordinary workdays of IT users as well as in their leisure time. IT myths are then brought into contact with the reality of how a certain type of technology is actually practiced and how IT users themselves understand their existence.

The third chapter of my thesis/book aims at giving a voice to a number of "IT users" and making visible the context of that conceptual framework, marked by information technology, within which they operate during their ordinary workdays. My interviews with "the IT users in the Village of Information Technology" suggest a pattern where the handling of IT as a "universal machine" includes a whole series of activities and tasks in society. I also discover, quite

naturally, that my informants experience a continuous line in their tasks which is somewhat independent of using the actual instrument of information technology. Partly - but only partly so as information technological procedures constitute both "means and ends" in working life - these suggestions also hold true for those of my informants who are working on the development of computer programs in various IT companies.

Graphic design of home pages on the Internet is the main interest of my informant Marcus as far as his information technological activities are concerned. The computer programmer Sofie considers her personal contacts with different service companies as both socially and intellectually stimulating in a process where programmers and company representatives are collaborating to figure out solutions based on the customers of each company and their various demands. On similar grounds – a correspondence that is partly independent of the instrument of information technology – the computer programmer Olof experiences a challenge in allowing his own rational thinking to interact with the logic operation of the computer program, where the different functions of the latter are made to work within a "given and logically organized" structure. No doubt, he would probably discover the same kind of structure within other fields of activity too.

The line of continuity in working life as moving through three field of forces

Let us now imagine three fields of forces that are linked vertically to one another. A positive value is given to the higher field, implying a profusion of those benefits which the user attributes to information technology as utilized at his or her workplace. In contrast, we assign a negative value to the

lower field – a lacking importance of information technology at the workplace – where IT may even be considered an obstacle to performing the "proper" tasks. Finally, the intermediate field is given a neutral value that represents equilibrium and balance. This amounts to a situation in everyday and working life where IT is recognized as a natural part of existence without any major consideration.

All of my informants' narratives "travel" through these fields of forces, referring to information technology. They are moving in relation to that "line of continuity", which, in terms of the interviews, is tantamount to a way of relating themselves, both mentally and socially, to what they consider the "central activity" at their respective workplaces. In short, it is a question of how digital information technology, in its present state, may be understood as to influence the line of continuity, that is, in a positive direction as an "abundance" in terms of the higher field or in a negative direction as a "deficit" in terms of the lower field. The final alternative is a field of forces that neither contains too positive nor too negative experiences or evaluations of IT at one's workplace, which forms the intermediate area within the hierarchy that I discuss above. Accordingly, this field may be termed "balance and equilibrium" as far as experiencing the line of continuity, the central activities of working life, is concerned. One or several of these activities would, ideally, travel through this field of forces unchanged, that is, the IT field in its concrete application.

In the thesis, I try to illustrate the previous argument by letting my informants' assertions define what is the central activity in terms of their working life. Moreover, it is my purpose to examine whether IT is understood as an obstacle

to work or function in agreement with the informants' desires. This dimension of working life, of course, is founded on subjective experiences. Still, as a social anthropologist and social scientist, I am quite convinced that what, for example, Maria, the social worker, tells us – about experiencing information technology as a concrete obstacle to her professional work in close interaction with clients as well as colleges – also applies to other persons with similar occupations. When informally comparing her narrative to that of some other social workers of the same age, I find that she is not alone in her experience of IT in working life. It seems possible to draw similar conclusions about how information technology supposedly affects their professional practice, in a positive as well as negative direction, for the majority of my informants. This problem, however, lies outside the scope of my thesis which does not deal with the issue of defining the working conditions of a specific group of professionals.

Generally, though, as I have previously made clear, working in front of a computer would not automatically encourage close face-to-face encounters between people at their workplace. Thus, workplaces that may earlier have offered a space for social contact as well as a sense of community of a spontaneous character does not accomplish such communication to the same degree as before. This process, of course, does not escape the awareness of the employees, a fact that most of my informants also express rather explicitly.

It is probably such an understanding that two of my informants, whose tasks are characterized by a considerable degree of independence in relation to their colleges and whose professions are associated with work of a more kind,

would seem to articulate. I am here referring to the ethnologist and historian Tor and the salesman Niklas, who, still after the introduction of information technology, have a very positive and rather uncritical attitude towards IT when it comes to their own workplaces. This may be compared to those informants who define their working conditions as more collectively or socially based, if nothing else, so in reminiscence of the past – for example Maria who is a social worker and Eva who is editing and marketing films.

Generally speaking, I would say that all of my informants partake of what could be called a "boom-and-bust effect" or, if you like, an enhancement of pace. Now, more tasks can be carried out by the individual employee, that is, in terms of what he or she may produce through efforts that lead to a finished product, a final result. When it becomes possible, then, quite swiftly and with relative simplicity to link more and more "final results" to more and more "final results" with the aid of digital technology, there is an enhancement of the pace from the perspective of society as a whole – even if the employees, who perform the individual tasks, do not always experience their output capacity as forming part of such an encompassing framework.

Efficiency and a rational approach as applied to each specific phase of the work process are both included in all of my informants' narratives. The instrument of information technology thus provides another allusion to what they, depending on context, believe themselves capable of accomplishing at their workplace – functioning either as an obstacle or a benefit.

From my interviews, I understand that digitalization, the automation of various functions in our society, of course

favours both speed and the personal adaptation of services and /or products. Paradoxically, it would seem, however, that contemporary digital development frequently also favours a kind of "inflexibility" within the established norm, that configuration which a computer program requires to operate smoothly. In other words, it is limited to run within a preordained range of possibilities – for as long as you "click on the correct rectangle" and give the program the "accurate response" thus leading one operation to the next.

This characteristic is nothing peculiar in itself, since all instruments will have only a limited register within which they are used. There is the risk, however, that as we as attribute other properties to the instrument than what it actually is capable of doing, or connect it much too closely with those activities of which it forms a part, that we transform its original value. In this way, for example, automobiles and to travel at high speed have sometimes become practically synonymous with "freedom". Further-more, communication by means of the Internet, stationary telephones or their mobile counterparts, may symbolize unlimited accessibility at, in principle, all levels of human life. IT could, on similar grounds, be understood as a "enhancing devise" for a large number of activities, especially when the instrument of information technology is incorporated into "the myth of information technology", that is, depending on the degree to which we concede to the cosmological underpinnings of the myth itself.

The conclusions of the IT users
All of my informants draw their own eloquent and explicit conclusions which often closely parallel those of the "IT theorists" discussed in the fourth chapter of the thesis/book.

The computer programmer Olof – 45 years of age in October 2000 – relates how companies are, at all hours, both locally and globally connected to one another by means of digital and automatic systems for the reception of invoices and orders. Thus, within his conclusion, there are statements about increasing automation, which, in its optimal state, might lead to greater speed and efficiency. It all boils down to a question of rationalization that, in turn, will create an increasingly larger "output", that is, an increasingly higher economic profit as based on increasing efficiency as to a large number of work processes taking place within the same company. Thus, the key phrases in Olof's functionally oriented statements are *greater speed*, *automation, rationalization* and *efficiency* in an unending struggle for a *larger output*, which, according to him, is naturally associated also with *better quality*.

Also the **social worker Maria** – 38 years of age in June 2000 – considers processes of greater speed in the handling of different cases, but she also claims that a dependence on merely one instrument – the computer – is responsible for creating stress at her workplace. She associates computers with such processes as individualization and efficiency. From Maria's point of view, the former process fits the description that working in front of the computer will give rise to an "isolationist egoistic type of culture" that is perhaps good for the economy department, but not for personal contacts and creative thinking. Exactly as for Olaf - the previous informant - the key phrases in her case are *greater speed*, *automation*, *rationalization* and *efficiency*. But for her part, there is also the issue that working with the computer might lead to *dependence*, *stress*, *processes of individualization and social*

isolation. In Maria's account of her working conditions, the emphasis on an increasingly larger output interferes with the quality that she wishes to retain in her working with colleges and clients.

As for **the ethnologist and historian Tor** – 44 years of age in August 2000 – who works at a museum, the opinion is a clear that digital information technology has not produced any significant changes of his working conditions. They are still, precisely as before, characterized by individuality and major personal responsibility for the final results. Tor underlines how IT, the computer and the Internet has rather "facilitated and refined" his capacity for processing his collected material, interviews and photographs in the field. He is quite aware of the increasing efficiency attained in being able more and more to bring together his material with the help of a computer, but increasing efficiency in terms of work does not, in his view, come into conflict with aspects of quality – on the contrary. Thus, in Tor's case, the key phrases are *greater speed*, *rational handling in combination with quality* and *IT, the computer and the Internet as a natural part of working conditions that, already beforehand, were characterized by individuality*.

Sofie – 22 years of age in November 1999 – who is **employed to develop computer programs**, is well aware that IT, working in front of the computer, e-mail via the Internet and Intranet may reduce the number of personal contacts with colleges as well as customers. She also mentions that there is a large measure of personal freedom as combined with responsibility at her workplace. Furthermore, she recounts a situation where stress forms an integral part of her ordinary pattern of life, both in her work and leisure time,

saying that it is difficult to find enough time. Knowledge and education become, in Sofie's view, perishable goods and additional education is constantly required to keep pace with the swift development occurring within the field of digital information technology. This corresponds to a situation at her workplace that harbours a lot of competition and, sometimes, demands from the customers concerning information technology, which, in her opinion, are much too "artificial". The key phrases as based on her conclusions are that *IT results in fewer social contacts at the workplace in relation to greater personal freedom, hard competition, constant education in relation to a swift development in terms of IT* and *sometimes much too "artificial" demands based on the development occurring within the field of digital information technology*.

The interview with **Eva** – 48 years of age in November 2000 – **who is editing and marketing films** for a big media company, reveals that a major problem for the company where she works is to withstand the challenge of cost efficient competition from smaller media companies as they are capable of using "cheap" digital technology when processing sound and images. Eva, too, considers how, at her own workplace, information technology as it applies to media production, local and global communication via e-mail, has diminish the space available for social contact and how there is now a general awareness of this fact within the company. In her opinion, the process of increasing individualization of tasks means that something important has been lost in what was previously a collective process of creative work. As Eva describes her working conditions, it is a situation characterized by fierce competition where you either keep up with the

development of information technology or are left behind. She is also aware of the situation that she will never be as expert at handling IT as the younger generation. Eva, however, turns this problem into a competitive advantage, stressing the necessary mastery of both "old" and "new" technology. *The larger output – cost efficient competition, IT development as an important competitive factor at the workplace, the process of individualization and a minimized space for social contact when IT is used, the loss of creativity when the former collectively based process of work was abandoned* and *the advantage of the younger generation in terms of handling IT* – thus are the key phrases that she is using when discussing the situation at her workplace.

In my summary of the informants' own conclusions, we have now come to **Niklas** – 39 years of age in December 2000 – who works as **a salesman of raw materials for the production of plastic**. He talks about a process of work that, as far as time is concerned, has become increasingly efficient regarding contacts between salesmen and customers through the use of portable computers and mobile links to the Internet. Nowadays it is crucial, also when out in the field, to keep up with the latest selling statistics and, furthermore, when being there, swiftly to forward information from the Asian producer of raw materials for plastic to the Swedish customers. Niklas also tells me about his recognition that computer programs may, in fact, create a lack of flexibility as they cannot, of course, obtain the "the proper feeling" for different selling strategies, that is, to start by selling a small parcel of raw materials, for instance, at the somewhat lower price that is customary in connection with larger volumes thus to be able later to sell a large volume. Niklas is

employed in a company where there is fierce competition. He reveals a clear awareness, when I interview him, of how easily replaceable he is as a person and salesman at his workplace. These kinds of working conditions may lead to counter-strategies and a belief in protecting one's territory by not disclosing all of one's knowledge concerning the information about customers that exists in the company's data base, thus making oneself much too disposable in relation to one's colleges.

Niklas might now (in the year 2000) carry out his tasks almost completely from home and when out in the field with the aid of modern information technology. Nevertheless, he wants to maintain an office outside his home in order not to be excluded from the social life that goes on at lunches and coffee breaks at most workplaces. In Niklas' version, the key phrases when it comes to using the IT instrument for carrying out one's own tasks are the following: *decentralized functions, time and cost efficiency, that more tasks are allotted to the salesman, that computer programs also entail a certain degree of inflexibility, fierce competition and the counter-strategy of not making all of one's knowledge available in the company's data base*.

Finally, we may turn to **the computer programmer and web designer Marcus** – 39 years of age in the autumn of 1999 – and his personal conclusions as gathered from interviews made in the autumn of 1999 and throughout the year 2000. His narrative touches upon almost everything from the procedures used in employment interviews by various IT companies to his first long-term employment in a "heavy-stake" IT company in the year coinciding with the turn of the millennium. In being employed in an IT company,

as Marcus puts it, he was recruited more to a particular life style than to a traditional position, that is, a normal job with strictly regulated tasks and working hours. In practice, however, this description function primarily as a rhetoric posture, an outward attitude directed towards customers, rather than being a factual account of this concrete working conditions. Still, complete loyalty towards the company's policy is, at least from a superficial point of view, necessary in order to keep the job at his very competitive workplace. And Marcus' own conclusions as to the difference between rhetoric, attitude and the actual conditions at his workplace is very characteristic of my interviews of him. According to him, there is a general recognition in the company that working in front of a computer is a socially and psychologically isolating act. The remedy for this "disease" are activities undertaken in common and parties as organized by the IT company. Marcus continues by saying that computer speed, as a point of reference, often invades those working conditions that are created by the IT companies - an increasingly hectic pace where "speed" frequently becomes the measure of efficiency. This, in turn, may give rise to counter-strategies taking the shape of projects that are often supposed to take a somewhat longer time than they actually do - simply to reduce the increasingly hectic pace and thus create some "breathing space" or, if you like, gain enough time for recovery. Marcus considers life-long training as a necessary condition for keeping the job and not being ousted from the swift development within the IT sector. The geographical sphere of activity of the company where Marcus works is global and the employees are supposed to be capable of moving in accordance with this. From the outside and

superficially speaking, the company seems like a horizontal organization with a sense of belonging, a "fashionable trend" for many companies at the end of the nineteen-nineties lasting until the year coinciding with the turn of the millennium – but in terms of real power such is not at all the case. Thus, again there is a difference between rhetoric and practice in Marcus' own conclusions. The key phrases as based on his narrative are the following: *to work in front of the computer is mentally and socially isolating, the job as a life style* with *individual mobility in a global market, speed of data processing as a reference for swiftness in the work process* and *high pace as a point of reference regarding efficiency, fierce competition, life-long training to keep pace with IT development* and *the strategy of working on projects which implies, if possible, a calculation of working hours exceeding the period that is actually needed in order to gain time for recovery* and finally *the IT company as a horizontal organization with a social and mental sense of belonging, which, however, is not horizontal in terms of real power*.

IT theorists who focus on function

In Chapter 4, I discuss the contributions of nine social scientists who represent factions of the international frontier of research with regard to IT as a phenomenon and force with the capacity to influence society. The common denominator of these authors and "IT theorists" is that they have all had their books translated into Swedish. In this way, their books have become readily available to Swedish speaking readers through libraries and book shops.

   In terms of their subject matters, these scientists represent a number of disciplines. It is of course possible, based on their professional adherence, to establish how they might

interpret our contemporary and IT filled existence. Another way of expressing this would be that these authors exist within different hierarchical systems of priority on the intellectual plane (G. Lakoff 1996) – so-called "cognitive hierarchical pyramids of priority". Thus, for example, a technologist or engineer would quite naturally busy himself with keeping track of developments based on information technology, a different focus as compared to that of a sociologist or, as in my case, a social anthropologist. Among the IT theorists whose contributions I examine in my thesis, there is a clear difference between those who discuss IT mainly from a technological and functional perspective as compared to those scholars who have a more socially oriented and critical approach as to what developments of information technology might lead to major changes in society.

Both of these groups, of course, are interested in "technological functions" *and* "the effects", or if you like, "the consequences" of digital information technology within a human and societal context. However, the concepts of technological functions and technological effects or consequences, *respectively*, belong to different compartments of hierarchical priority as they are understood by members of the two groups. Considering the IT theorists in my thesis, I have found that "function" in its technologically visionary form is given a high degree of priority by **Nicholas Negroponte** (1996) – **the chief of a media laboratory that belongs to the Massachusetts Institute of Technology – MIT** - in Boston, USA. Also **Michael Dertouzos** (1998) conducts a very functionally oriented visionary analysis depending on his technological profession as **head of the**

department of computer science at MIT. But also in the writings of the **mathematician and pedagogue Seymour Papert** (1998) and the **sociologist and psychologist Sherry Turkles** (1997) is it possible to notice how functionality on the visionary plane influences their analyses. For pedagogue Papert, the main concern is the capacity that interacting with different forms of computer programs and the Internet might have as an encouraging force in terms of education. Furthermore, various kinds of role games on the Internet harbour, in the analysis of psychologist Turkles, a great potential for serving as a healing force, both therapeutically and mentally, as far as the individual is concerned. Hence, in their analyses, the technological function is highly valued and the *effect* of practicing IT consequently assumes a visionary form that becomes just as visionary as when the *function* is discussed from a general perspective – with a basic orientation towards the future.

Likewise, **architect William J. Mitchell** (1997, 2000) represents a clear functional orientation in his analysis of contemporary IT society and, above all, its future development. He discerns in IT a technology with a great capacity for creating new and automatic functions within our immediate surroundings. The social analysis, in his case, is limited mainly to emphasizing that digital information technology must be allocated fairly in terms of its availability and according to democratic ideals, which implies that, in principle, nobody should involuntarily be without a computer or access to the Internet.

Mitchell, like the other scientists mentioned above, was employed at MIT in the years immediately before and at the turn of the millennium. From the writings of these scholars, it

is easy to understand the reason why they show such great confidence with regard to the sphere of market adjustments in Western society. In their writings, IT is considered an active, constantly developing force of influence. It is, in their case, a question of studying possible functions intrinsic both to contemporary digital information technology and the future practicing of IT.

Crossing territorial boundaries – conclusion no. 1

The above-mentioned IT theorists at MIT discuss the interaction between humans, computers and the Internet in terms of transcending boundaries, which, in turn, are analyzed mainly from a perspective filled with visions for the future.

My informant Niklas, who is a salesman of raw materials for the production of plastic, also talks about border-crossing communication by means of the Internet – from the standpoint of his own working conditions. He explains how customers, when they run into problems with production, may contact directly the salesman who is responsible for selling the raw materials. The salesman, in his turn, send someone out who takes photos of the imperfectly moulded plastic material with a web-camera. Then, photos and production data are sent directly to Asia via the Internet and the answer will arrive within a few hours. Niklas' narrative also provides me with an opportunity to gain insight into working conditions, which, for all of the parties involved, are characterized by the striving for a high degree of efficiency as far as time is concerned.

As for the producers of plastic goods, this situation means that the cost of machinery will reach such a high level that, according to Niklas, it is never allowed to stand still.

Life-long training – conclusion no. 2

The processes of life-long training is an issue touched upon by the IT theorists at MIT. My informant Marcus – who is working with web design and programming in a major IT company – describes how life-long training is guaranteed in the company and how each employee has to participate in various courses for 100 hours every year. For these hours, the company pays the usual salary and the employees also receive 25 000 Swedish crowns per year for buying literature. According to Marcus, this policy assures that each employee keeps up with the latest developments within the field of digital information technology - considering the situation that the software which Marcus was trained to handle more than a year ago is no longer used.

Incorporating/excluding – conclusion no. 3

Digital information technology is often characterized by the IT theorists at MIT as a kind of "original power" considering its rapid form of development. A consequence of this is how the practicing of a new technology may both incorporate and exclude people at their workplace, that is, incorporating persons who accept a new technology in contradistinction to excluding those who do not accommodate themselves to the new conditions. Eva – my informant who is editing and marketing films – gives a clear expression to this process of incorporation and exclusion. She says that, at her workplace, there is no room available for those who do not keep up to date with the development of digital information technology. A combination of knowledge in the handling of old as well as new technology is, in Eva's opinion, both commendable and could offer a niche for survival when it comes to keeping one's job. She is also well aware that she may perhaps not

succeed in defending her position in the media company and says that such an outcome is entirely consistent with "the rules of the game".

Theorists focusing on social effects and the critical examination of IT

I have already touched upon four of totally nine IT theorists as discussed in the fifth and final chapter - also in this summary in English of the thesis. Thus, five IT theorists remain and what distinguish them from the scientists at MIT is an open criticism of developments within our society that are much too focused on technological achievement, including the field of digital information. Thus, in the pyramid of cognitive priority, the recognizable "effects" of a particular technology on contemporary society gets a high priority. Functionally speaking, of course, their viewpoint is not as visionary in its orientation towards the future as that of those authors whom we now might call "MIT's IT theorists".

With an increasingly higher speed – conclusion no. 4

The city planner and philosopher Paulo Virilio (1996) considers the effects of increasingly higher speed. He discusses what may happen when a new technology interacts with existing social structures, that is, the chain of events that unfolds when technological development results in an increasingly higher pace which affects our existence as human beings and could even provide us with a new basis for comprehending life. From Virilio's analysis, it is possible to understand how higher speed would generate processes of change at, in principle, all levels of social and human existence. The majority of my informants describes a situation of higher speed and an increasingly accelerated pace.

The computer programmer Olof reports about a completely automatic electronic process, consisting of electronic handling of incoming orders where, similarly, large portions of what was previously called a "stock" now exist within a "continuous chain of transportation" – between sender and receiver, producer and consumer. This electronic ordering system is operating and open for communication at all hours without any real need for human intervention.

My informant Marcus - who is working with computer programs and web design in an IT company – refers to a situation where the "speed of data processing", as measured by concrete transmission, serves as a point of reference for efficiency. What he considers here is computer based tasks where speed has become synonymous with efficiency.

The social worker Maria describes how working with computers now often dominates tasks which have previously been more oriented towards people – clients and colleges. Handling an increasing number of tasks by means of computers does not leave much room for spontaneous, qualitative and personal contacts in such cases.

For my informant Niklas, whose work consists in selling raw materials for plastic products, it all boils down to an issue of increasing speed within the whole field of activity from the deliverance of raw materials in Asia to the finished product in Sweden. With the aid of modern information technology, he now stands in direct contact with his Asian suppliers, a fact clearly influencing the way in which he and other actors describe their work. It has become a question of increasing speed in terms of all procedures from the deliverance of raw materials to the finished product. Niklas confesses that he is now more focused on his work as a

salesman, pursuing his contacts with customers with both greater intensity and efficiency. He also describes a work environment where the cost of machinery is calculated at such a high level of cost efficiency that no lengthy interruptions of the production process could possibly be allowed – the consequence of which, of course, is a quickening of the whole work process.

Flexibility and short-range planning – conclusion no. 5
Sociologist Richard Sennett (1999) points to a development of contemporary society that may generate life strategies based on flexibility - in private as well as in working life - and the short-term planning that is often implied. According to his analysis, what is at stake here is a macroscopic structure that consists of global market forces interacting at high speed by means of IT, that is, forces of a rather ephemeral nature, which, for that reason, may cause instability at the local level.

Moreover, Sennett claims that in their constant readiness to deal with unpredictable changes, actors are largely incapable of creating long-term life strategies, such as, for example, to enter into local and collective associations based on social and mental continuity.

A different way of presenting Sennett's analysis is that digital information technology and the forces of the free market contribute in the creation of a "culture" where previous forms of social density and collective bonds are dissolved. This process of dissolution occurs both in working life and when people are at home. In the latter case, it is the relationship between parents and children that Bennett considers, that is, a pattern of social life that is no longer based on tradition and continuity in terms of norms and

values which are being transmitted from one generation to the next.

As for the social worker Maria, however, the main concern is the kind of dissolution that has occurred at her workplace and the feeling that she has of dealing far too much with her clients' problems by means of computer and not, as was previously the case, through personal talks. And it is precisely such spontaneous and creative talks that have, in her opinion, become a real shortage at her workplace.

Also Eva who is editing and marketing films discerns a pattern where co-operation on a collective basis has diminished. At her workplace, she explains, social contacts have now dropped to a minimum, while people often helped one another previously with various task and the buying of services from within the company – state of the art competence - was not required, as it is today.

Mobility and power – conclusion no. 6
Sociologist Zygmunt Bauman (2000) considers "mobility" a highly valued factor in the contemporary building of society as based on IT and various networks. He complements his analysis with a discussion of power and class structures where only the socio-economic elite has the resources needed to be sufficiently mobile, that is, in relation to our present global and network building "game plan" in the production of goods and services. Also in Bauman's analysis – in accordance with Sennett's – contemporary social development is characterized by diminishing opportunities for entering into groups with a sense of community, loyalty and belonging that is both profound and permanent in the long run. Another way of phrasing this problematic is to say that collective and locally stable ties – while both socially

profound and temporally permanent – are increasingly re-placed by superficial and temporary groupings according to the ideal of "global mobility". The last-mentioned state of affairs, while unattainable for most people, nevertheless acts as a powerful force that influences different actors in society at large.

For some of my informants, the ethnologist and historian Tor and Niklas who is working as a salesman of raw materials for the production of plastic, the use of digital mobile communication technology facilitates their already mobile and individualized work – where social contacts do not have any higher priority in connection with the tasks undertaken.

According to computer programmer and web designer Marcus, mobility – at the national as well as international level – was a requirement both for getting and retaining his job. Hence, the company checks very carefully if a prospective co-worker may fulfil these norms. An unmarried employee is considered more mobile than someone with a family and children. Marcus, who is married with two older children, must as a result make his ability of being geographically mobile clear to his employers in the IT company. Furthermore, he is fully aware that he is replaceable in the company and that whatever "sense of belonging" created there is, in fact, part of a permanent structure of power relations and competition. Marcus relates that, mainly among the younger men in the company, a more genuine "sense of belonging" exists. These men in their early twenties buy a lot of shares in the IT company and put their stakes on it becoming more profitable, "also" because their own stock would increase in value then.

My informants' personal thoughts about their situation in working life correspond well to the conclusions drawn by the IT theorists – Virilio, Sennett and Bauman – concerning the complexity found in that array of automation and rapid communication made possible by digital information technology. There is also an agreement as to the notion that what encourages this kind of development is an economic system that is market and network based. Thus, short-range forecasting becomes a "side-effect" of a development which consists in increasing flexibility and rapidity in terms of how people are handling their tasks – in work environments where social density tends to diminish, frequently to the benefit of strategies of individual competition.

Macro-perspective and plus effect – conclusion no. 7
From the analysis conducted by Manuel Castells (1999, 2000) a process of social change is discernable that results in our contemporary, and even more so, future network society as based on digital information technology. He argues for a "plus effect" where the interaction between the components will affect the world system as a whole – a world system that is now in a state of dissolution. In Castells opinion, this dissolution creates a vacuum in the development of particular societies, which may, in turn, permit for changes to occur. In other words, it becomes a question of the consequent rebuilding of society as generated by the united action of the individual components. I shall now illustrate the plus effect as based on Castells' line of reasoning: *computers and digital micro technology + generally available mobile tele-communication + genetic manipulation + electronically integrated global financial markets operating in real time + a globally interrelated capitalist economy + a majority of the*

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urban labour force of the developed economies being employed in the processing of knowledge and information + the fall of the Soviet regime + the fading away of communism + the end of the Cold War + parts of Asia as equal parties in the global economy + the challenge towards patriarchy + a general awareness of the significance of environmental protection + timeless time in a global network society.

In accordance with Castells' method of defining network society in terms of "additional plus effects", I approach the statements of my informants – as related to their particular working conditions - from a similar perspective. In doing so, I consider the following elements as comprising the plus effects: *increasing speed + automation + rationalization + a striving for "higher output" + processes of individualization + less personal contacts at the workplace + fierce competition + constant education in relation to a swiftly proceeding development within IT + cost efficient competition + IT development as an important factor of competition at the workplace + a loss of creativity due to the abandonment of previously collective work processes + the younger generation surpassing the older one in terms of using IT + decentralized functions + time and cost efficiency – the case that computer programs may also bring about inflexibility + work as a life style + a social and mental "sense of belonging" within individual companies, but not in terms of real power + individual mobility within a global market + speed of data processing as a point of reference for the rapidity of the work process + high working pace as a point of reference for efficiency.*

The picture now emerges of a work environment which is partly traditional, but also new in so far as it creates an

"overdrive" with regard to decentralized functions and processes of individualization at particular workplaces. For my informants, this occurs in connection with competition that is often fierce and a much increasing working pace. Here, the importance of keeping up with the rapid development of digital information technology should also be added. Next, to conclude the summary of my thesis, I shall present an interpretation of the hype in "cultural" terms.

Starting-point no. 1 for a hype is …

… that its message is accessible to as many people as possible. It becomes a question, then, primarily of coming into contact with the "world of ideas" that it represents, which implies that a majority of people will not immediately be involved in using it in a practical sense – as when, for example, a new technology is introduced. The same analytical starting-point may also be valid for an ideology, a religious or political message and those activities which they entail. Deciding for or against the message of a particular hype, that is, estimating its content or potential also means to come into contact with it.

On these grounds, it becomes possible to determine how IT, the personal computer and the Internet were introduced in contemporary society and, in a short span of time, went through a series of phases: *introduction*, *hype* and as *everyday instrument*.

Digital information society – the question of whether to fit in or not

A person may sometimes create an image of himself or herself in order to examine how he or she fits into a particular type of society. This person is in a position, then, to reflect about what the result would be if he or she was trying to

adapt and acquire those skills required to gain entrance to the dominant social model (R.Montoya 1992). In this case, the dominant model is the heavy investment in IT, a new and rather untested technology on a larger scale, in the years immediately before and at the turn of the millennium. If such a "projection" would correspond to the individual's concrete situation in life and he or she fits in, the individual in question is, no doubt, welcome to participate in the dominant social model – in a society, for example, that for a period of time is focusing very heavily on the handling of digital information technology.

Starting-point no. 2 for a hype is …

… that it would give some leeway for various expectations before it has "landed" and obtained a more stable form. It may then provide nourishment for hopes and dreams, *but* also for their opposites as it, in creating certain expectations, makes other kinds of reaction possible. For a lot of people in society, however, a hype is distinguished by its ability to inspire hopes for something new, better and different.

The IT hype provided a "visionary overdrive" to a number of activities that already had a permanent form and sometimes even existed in a state of stagnation – at least in terms of their organizational handling – the political project, parts of our system of public education, transports and other services connected to infrastructure.

The foregoing type of scenario may give rise to conscious as well as unconscious strategies among social actors and when a hype would seem to be radiating with success, it attracts many people who are only to willing to bask in its light. This state of affairs, however, could quite suddenly turn into its opposite as radiation diminishes.

There is no ambivalence in the investment in something new

The hype forms part of a process where members of society, by investing in something new and often innovative, are trying to get rid of that "negative energy" which as been gathering within their world of ideas and on the emotional plane. From this perspective, a hype also becomes a phenomenon that, for a time, may unload society of such negative energy and ambivalence ("negative energy, ambivalence in relation to social movements" - Alberoni 1984).

If the hype gives rise to social movements, it is only because of those expectations that are contained within its own peculiar character. A hype may, therefore, provide nourishment for a number of existing social movements, as the hopes and dreams of many people - especially in the initial phase of a hype - become associated with the implementation of a new technology, a new instrument or with the practising of a specific ideology. Consequently, on the psychological plane, there is a broad register of expectations contained within a hype. Both rightwing and leftwing groups, technocrats and humanists may be nourished - even if only selectively so – by that expectation of continued nourishment characteristic of a hype. This, however, should not be understood as if nothing has happened as the "euphoria" of the hype begins to fade away.

Starting-point no. 3 of a hype is …

… that something has actually happened as the attraction of the hype diminishes or would sometimes collapse because of its own preposterousness as to fulfilling everybody's expectations – not all people will be "winners" when things are changing and neither, of course, will all be "losers".

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A hype always entails a "output" that is different from its "input". The world or life in general will always look and function a bit differently after a hype has occurred as compared to what went before. Hypes based on ideological, political as well as technological reorganizations may after the historical event - in hindsight – be evaluated either as successes or a failures, even as a phenomenon falling somewhere in between.

Our present success on technological grounds, giving us the opportunities of mass communication in real time and on an individual basis, independent of the great geographical distances that could separate people, is a material fact. In addition, however, there is the possibility of being transported rapidly over long distances only to have some hasty meeting, while simultaneously, the implementation of digital technology often acts to eliminate close and personal encounters of people in everyday life. This contemporary technological "success" may in social terms easily be considered a failure from a perspective based on a less intensive and more "deep-going" and "collectively reflective" form of communication.

However, sometimes a past failure could turn into a future success, and the combinatory possibilities of judging whether we are dealing here with a technological success or social failure are, of course, almost without limits.

From construction to reconstruction and that something is also happening
It is possible to conceive of a process consisting of *the concrete implementation*, *the actual sequence of events* and *the retelling* where the "accumulative" effect is to be found primarily in the "final stage" of retelling. This "phase"

amounts, in our case, to a retelling of those possibilities intrinsic to information technology that will become available to many members of contemporary society. However, the three concepts mentioned above should not be understood as representing a series of chronologically fixed stages, but as placed upon an imaginary peg-top or spiral the movement of which is accelerating. When the speed has become sufficiently high, the various elements of the units begin to mingle. And with a further quickening of the rotation, the concrete meanings and contents of the previously distinct units become imperceptible in relation to one another like what happens in the case of the contours of a colour-painted peg-top ("the concrete implementation, the actual sequence of events and the retelling - J. Cronehed 1998).

What remains, then, is the "image" of that which is, or probably is, technologically possible to realize. Thus, it is a process of creating ideas and images, which, in its mental projection, forms an integral part of information technology as well as other types of technology that are undergoing development. It is important to emphasize, however, that processes of change – also those carried along by means of a hype - are not a "zero-sum game" consisting merely of winners *or* losers. Naturally, it is more complex than that, and in processes of change that are based, for example, on technology and/or ideology you may always accomplish something, but will simultaneously lose something too. In working life and in leisure time where nowadays, for instance, a high degree of rationality and planning is introduced, what is frequently lost is the unplanned and irrational. With processes of individualization in working life, you have often to give up any collective co-operation.

Some final words

Perhaps, the so-called IT revolution may only become "truly revolutionary" when digital information technology is capable of solving the paradox that consists in combining increasing efficiency with a lowering of the pace in society, a solution that, in turn, would correspond more closely to the intrinsic resources of humans both to handle speed and diversity.

Of course, trends towards increasing speed and diversity are a more constant factor in our present society, if seen over time, than the contemporary and large-scale introduction of IT – in working life and leisure time. Yet, it seems reasonable to argue that digital information technology is responsible for creating a particular form of speed and diversity, which, in turn, still contributes to defining what is "hard work" in the Western world. From having been primarily something very demanding physically, contemporary working conditions are much akin to a situation of "over-stimulation" within the sphere of creating communication. ("diversity and over-stimulation" - T. Hylland Eriksen 2002. "technology and adaptation" - R. Harvey Brown 1995).

Probably, the conflict-ridden scenario discussed above does not constitute any major problem from a time perspective including several generations, since people who grow up with an already existing technology will usually develop a quite natural relationship to it. Here, we may speak of a harmony between orientation and the implementation of a technology, that is, in the relationship between people and instrument – IT – that is as constant with regard to time as humankind itself considered as a species occupied with building society.

In our contemporary society and in a situation oriented towards mass production *and* "individual design" with a relatively short life-span, the decision making that would also make possible a slowing down of speed is for the moment entirely up to ourselves … while waiting for the next hype and the next ….

Most likely, even a hype may change its character as based on the technological means available. The suggestion could thus be made that IT has itself also been a force influencing the IT hype as well as other upcoming hypes on the premise that digital information technology is associated with diversity, large-scale organization and very fast communication – not least in global terms. On the same grounds, it might be said that, as a social phenomenon in so far as its global extension, large scale and the swiftness in its "rise and fall" are concerned, the hype was probably influenced by IT– all this while waiting for the next hype and the next, and those transformational processes of which a hype, nevertheless, would form an integral part ….