



Theses and Objectives on the Management of Tele-Processes

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Abstract

Future work will be more or less telework and telecooperation. These teleprocesses have to be managed, to overcome huge technological, economic and sociological problems. The new task facing management in its daily work lies in drastic reduction of face-to-face contacts between supervisors and workers. Thus person-oriented management patterns have to be rounded out by suitable task-oriented techniques and procedures. And leadership has the opportunity to lay down new objectives – beyond shareholder value – to reach global distribution of work and wealth, and to generate a world culture serving humane ideals in the true sense of the world.

Keywords: telework, telecooperation, telemanagement, telecommunication, teleprocesses

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Gelöscht:

1. Telemedia have changed the world

As our century winds up, it has become clear that industrial society as it has formed in the last two centuries is changing its character more and more through the efficient use of IT, giving rise to a new world transcending its bounds: the **IT society**.

1.1 Telephony

Waystations of this development are the computer and communication network, which together embody the IT prerequisites for one of the most signal revolutions in human history. Just how important this epoch-making evolutionary process is becomes abundantly clear when we look at telephony, which has grown into a principal technical system. Its significance in daily life is no less uncontroversial than in the major decisions in economic and political life. You don't have to necessarily think of the "hotline" (of Cold War fame) to grasp this. Ever since mobile phones have gone public, it can be seen and heard everywhere that at least this communication form is omnipresent. The consequences are plain to see:

- We communicate more often and with ever more distant persons,
- We are better informed than we were, and
- All processes unfold more rapidly and with greater differentiation.

Does this mean the world is becoming more hectic than it already was? Whatever the answer is, the influence of this simple medium (and it "only" links us acoustically) on our everyday life is great.

1.2 Television

But even greater is the influence of a somewhat younger and more differentiated medium, namely television. It reaches practically all the six billion people currently living, including more or less directly many of the poor in the third world. News, ad spots, feature films - practically everything optically and acoustically depictable - are integrated into this medium, exerting a lasting influence on the outlook and behavior of viewers.

Thus we may suppose that Germany's reunification was strongly influenced by western television, with particular reference to advertising. The western standard of living palpably paraded there has lost none of its power to convince many that better worlds exist elsewhere and that they are worth striving for. But not only visible western consumption leaves its mark on the way people

throughout the world behave; so unfortunately do images of warfare, violence, and sex - not to mention ridiculous soap operas.

Is that our reality?

Is that the direction we're heading in?

1.3 Telecommunication

In any case, the influence of the media is great and extraordinarily effective within society. It is of no less import than the influence of work exerted for centuries in the western world, all the more because the latter has been undergoing lasting change before our very eyes. As a result of the shaping power of telecommunication, our working and job lives will soon be completely restructured. This is shown in trends still seen by many as peripheral phenomena, but which are in truth signs of what is to come and which we must be prepared for:

First and foremost here are mobile phone users and hotline services, mobile computing and telework, and above all the **Internet**. This is the most rapidly growing structure ever created by mankind, which will soon link up all communication media and allow streams of news from round the globe to converge into a single, gigantic sea of information, giving rise to a universal multimedia hub for the commodity information.

What happens here and globally in our day and age will not only mark our times, but also change the world.

2. The 21st century will be the century of tele-processes

Telephony and television and the modern communication media shape our world and have already caused the transition from an industrial to an IT society. The centralized work and job structures primarily laid down in the last century are once again being decentralized by the diverse modes of online computing, here called tele-processes, and require new coordination procedures and instruments at whose heart will be the Internet or whatever will evolve from it.

2.1 Tele-Work and Tele-Cooperation

One of the first teleprocesses - it harks back to the telex-era, i.e. the 1960s and 1970s - is telework. By this is meant all office work performed outside the central office using telecommunications. The telework spectrum extends from mobile phones used in the car to regular work done in fully equipped home

offices. Telework at home as a work option, however, still the exception, usually taking the form of an alternating process between office and home space. The different modes of telework are growing at breathtaking pace, thanks to the IT networking of our everyday working lives, so much so that a large volume of information-based work will soon be done online. This is especially made possible because restriction to outlet-oriented individual work will increasingly be eliminated.

The broad spectrum of the media, including the Internet itself as well as high-performance software packages (e.g. groupware), by now permit not only teleconferencing between politicians, managers, and experts, but also cooperation between everyone involved in information processing. Telecooperation transcending space and time will finally liberate our on-the-job lives from the narrowness of the megaoffice.

Not only are job processes and structures themselves affected by telecommunication; work itself is undergoing deep-seated change. In the information-based work process, some steps recede into total insignificance (such as taking dictation), others come into existence (call centers) and still others are shifted elsewhere, i.e. even the subjects of the work process are changed. Work procedures handled today by firm employees will be performed by tomorrow's customer.

2.2 Tele-Banking ...

Banks and insurances were among the first to experiment with such models of "customer self-service" via computer. Today in the financial sector we already find a high degree of networking, and every Internet user can carry out his transactions online.

Telebanking, online-banking, and Internet-banking are plunging our credit system into fundamental change, resulting in a change in sales and marketing avenues, though less so in the product lineup¹. The effect on our everyday lives is considerable.

Everybody is benefiting from genuine progress today in the form of the almost ubiquitous cashpoints. In any event, it has never been so easy to obtain ready cash, whether at home or abroad. The advent of the so-called electronic money signals yet another change to, and improvement in, payment systems.

¹ Thus Hermanns/Sauter (5, p. 388ff.)

2.3 Tele-Shopping and E-Business

Besides bank transactions, everyday shopping can now be done via the Internet. Here the term teleshopping has come into use. Many women, however, have found this a fairly sobering process. Though they enjoy looking at the display items on virtual shelves, they miss the glossy feeling of cloth on their skin. And we are still far removed from being able to electronically simulate this. Nevertheless, dropping in to electronic stores will soon become as much a matter of course as surfing in travel agency catalogs and airline flight schedules.

Companies that offer their services over the Internet will increasingly trade among themselves, handling electronically all phases of the marketing process. Turnover in ecommerce has had a vertical growth curve, which has induced evermore entrepreneurs to opt for this medium.

Yet not only the market, in the usual sense of the word, but the entire supply chain connecting suppliers to customers via the production process, is being set up as a cross-organisation data system and further transformed into ebusiness - only the goods themselves have to be non-virtually moved - but who knows? Perhaps in future we will even "beam" our wares to each other?

2.4 Tele-Metry / Tele-Matics / Tele-Medicine

Nonetheless, first calculations indicate the immense expenditure implied by transporting even the smallest particle by cable or by air. On the other hand, telemetry is making an ever bigger impact. Of course we think here primarily of modern warfare with its satellite and rocket control systems. Fortunately there are also non-military applications of telemetry: e.g. in space research, pipeline management and traffic control, where on-board computers are already highly proficient in giving directions. Modern city administrations use satellite surveillance systems to free up downtown traffic and to nab speeding traffic offenders...

Telemetry opens up particularly exciting prospects for the health system. While sick-bed physicians may not be supplanted by telemedicine, probably the patient will one day be so supported by telediagnostic and teletherapeutic measures that he achieves a high degree of responsibility over his own health. "Technical procedures for preventive medicine and active care for the healthy, and for support and monitoring of the sick and those requiring constant care,

will be an integral part of tomorrow's private households as well as standard fare in hotels and vacation apartments."²

2.5 Tele-Learning / Tele-Teaching

No less than in medicine, telecommunication will also induce great changes in education. Development is particularly rapid in telelearning and teleteaching. Even television as an educational medium can no longer be dismissed. Though more or less palatable entertainment undoubtedly predominates, never were we humans so closely confronted with nature, art, and culture as today.

The problem is less the absence of tactile elements than the sheer information volume of these virtual, visual, and acoustic worlds as well as the randomness of the topics on offer. Regulated learning presupposes selection processes (learning on demand), presentations, and controlled contributions via the Internet.

Much still remains to be done before regulated home-based telestudy at the computer can reduce the load on the mega-university.

Thus, face-to-face instruction and presence-oriented learning processes in no sense belong to the past. But the Internet-mediated availability of mankind's entire knowledge store, its up-to-dateness and the asynchronicity of the curriculum, will so mark tomorrow's educational system that a comparison with the social after-effects of the advent of printing quite suggests itself.³

2.6 Tele-Politics ...

Even politics should not be omitted from the context of technology-driven social processes of change. Not only are television appearances by politicians and parliamentary sessions telecast to all corners of the world; but likewise tomorrow's citizens will be able to achieve, from anywhere in the world, active input into the opinion formation process via televoting - indeed multimedia conferences with active involvement of participants are already happening now.

As to whether these options truly serve the democratic spirit, is by no means clear. Doing the right thing when flooded by information requires navigational skills possessed by few. Accordingly, we will do well to carefully select our representatives and equip them with whatever best helps them master their

² Kleinschmidt (10, p. 209)

³ Garbe, p. 55

difficult task, namely with the knowledge and time to process it in the desired spirit.

2.7 ... and Knowledge Management

This means that knowledge management is not only vital for our managers and experts, nor only within the internal network of organisational and technical know-how, or in cases of best-practice and marketing expertise, but above all for our representatives and politicians. None of them is so placed today as to be able to completely survey the matters up for decision and to prevent faulty decisions, taken through inadequate detailed knowledge. Knowledge and competence data bases as well as Internet assistants with a talent for discovery, can expedite the work of those in power.

Naturally the above also applies to our experts who want to do things properly, as well as to our top managers who should do the proper things. That is why knowledge management on the basis of both internal and external network services is a very high priority. But knowledge management alone will not suffice to plan and control the numerous processes coursing through the network. What forms of cooperation and management should be followed to prevent an unholy chaos and instead move a decisive step closer to the desired order?

3. An epoch-making innovation has to be faced

Planning, steering, and controlling teleprocesses is a pivotal task of management, involving as it does the achieving of procedural innovation of the first import. Without any exaggeration, developing and introducing teleprocesses also poses a major leadership problem. Nothing less is at stake than an exodus out of the matter-dominated industrial society to a more or less virtual information society. Besides the experts and managers of factories and companies, the challenge is particularly topical for leaders and politicians on all levels and political party shadings.

And here I expressly wish to include those working in education, i.e. teachers in elementary school, high school (general and advanced), and vocational school, not to mention in technical colleges and universities. They more than anyone are so placed as to render comprehensible, and thus manageable, this transition to a new dimension of working life - with all its technological, economic, and organisational or sociological problems.

3.1 Technological tasks

At the top of the list are technical or technological questions, requiring answers within the framework of telemedia and teleprocesses. It would be unrealistic to assume that these will be redundant some day. The technological process of development is likely to remain in motion for the foreseeable future, challenging the commitment of managers, politicians, and experts alike.

Up for discussion are primarily the efficiency of systems and networks and configurative problems too; these will place demands on our instrumental know-how far exceeding the knowledge and abilities of normal people. Furthermore, ergonomic standards and the requirement of user friendliness will need clarification and solution, quite apart from those two cost-intensive "side shows" of IT: safety and security. Safe access procedures or regulations and transaction pathways into the Net, digital signature systems, electronic money on the one side, and viruses, hackers, and anonymous slanders on the other, mark today's and tomorrow's scenario and keep us on tenterhooks.

3.2 Economic problems

The economic aspects are no less daunting. Erecting a "firewall" for systems and feelings will cost money, not to mention the globe-spanning communication system itself, which will not only cross borders to reach the humblest abode, but will also swell in on-site volume and complexity. The costs will become astronomical and tie down the resources of entire generations. The interlinked questions of funding and employment need to be seen as a global phenomenon, calling for suitably responsible decisions from managers and politicians. Not infrequently the future of entire firms weighs in the balance, particularly the smaller ones - and at stake is every single job. Each one of us is affected, both as producers and consumer.

The "prosumer" (A. Toffler) will, however, not only consume and produce - he will also wish to invest, thus giving an enormous boost to demand and lending wings to the global economy, that is for as long as the effect lasts, and plunging it into crisis whenever this boost fails to materialize - even if only temporarily. It must therefore be clear to all those responsible that the core problem of our times - unemployment - will be decided in this context.

3.3 Organizational opportunities

The organizational consequences are no less fundamental, but as of now only partly predictable. Common to the above described development, however, is decentralization. Teleprocesses work in such a way that the centralized structures of performance everywhere at large in the economy and public life, as also in citizens' daily lives, are loosened up and dissolved by decentralized processes. The centuries-old centralization trend towards ever-expanding industrial centers with factories and offices, a process that accompanied industrialization, is now giving way to a counter movement where home and workplace converge.

The hallmark of this innovation process in our society is the detachment, i.e. the loosening of the production technology-based ties, of the individual from his environment:

- **Spatial detachment** is, in a certain sense, the constitutive criterion of teleprocesses and appears, depending on process, in several developmental steps. It is at its most advanced in telebanking and telemetry, while other teleprocesses - teleworking and telelearning, for instance - are still just starting out. But here too we clearly see the second dimension of detachment, namely the
- **Temporal detachment** of processes. By this is meant greater independence of teleworkers from fixed working hours and office schedules, but also the vision of a just-in-time availability of information and the instant accessibility of resources.

3.4 Sociological changes

The various forms of telework render visible further dimensions of detachment, which transcend the purely organizational aspect and possess sociological relevance. Work performed on a home-based computer, as well as any kind of mobile telework, is not only work performed at a distance, but is also mentally removed from the usual purview of one's supervisor. The concomitant

- **Job flexibilization** is not only reflected in the status of the freelance worker. Likewise the teleworker holding down a regular job enjoys a larger measure of freedom. He can order his working day as he chooses, deciding for himself where he wants to do his work; he is also more independent in his choice of problem-solving strategies. In addition, the law gives a freelance worker freedom from being subject to instruction, which in turn assures him a high degree of self-determination. Admittedly, the semi-autonomous worker also has a high risk exposure, because - and inasmuch

as - he is not integrated into the corporate and union insurance systems. Here we can speak of

- **Social flexibilization.** The freelance worker is actually no longer an employee but a mini-entrepreneur, with all the advantages and drawbacks this entails. The fact that recent legislation is trying to rebind him into the social solidarity that goes with being employed, is in no way a contradiction. In principle, a freelance contract constitutes a sui generis contractual relationship, assigning him a status between that of employee and entrepreneur, so much so that, as social trends take their course, it has every chance of assuming the role of an occupational relationship viable for the information-based society.

If this is true - and from the trend to more job independence there can be as little doubt as from the trend to autonomous purchases in virtual stores - then the current management strategy practices will have to be fundamentally rethought. Managers, for instance, who consider the personal presence of their office employees as essential for successful work will soon be exposed as an unteachable old guard.

4. The IT era has to be managed

What can replace worker supervision and performance control, the exercise of team leadership, and conflict arbitration? Are in-firm meetings becoming as obsolete as coaching managers? Is collaboration between colleagues, that is to say teamwork, completely pushing out the received hierarchical structures?

Of course this is not at all to be expected; more likely are considerable changes to managerial techniques as well as to managerial content.

4.1 Tele-Management

The new problem facing management in its daily work lies in the drastic reduction of face-to-face contacts between supervisors and workers. Thus, for teleprocess purposes, person-oriented management patterns have to be rounded out by suitable task-oriented techniques and procedures. What is needed is a specific form and blend of the well-known coordination instruments of personal direction, self-coordination, formal planning, and general regulation, all of which should be subsumable under the term telemanagement:⁴

⁴ Cf. on this point Heilmann (4, p. 394ff.)

- The coordination instrument of formal planning must head any attempt to sketch a new management approach, since analysis of planning and control procedures has shown that decentralized work requires considerable coordination efforts. Institutional planks have to be created, which enable realization of the activities connected with planning and control, i.e. decision-making teams for compiling and coordinating plan segments. The task thereby devolved is similar to that of industrial work preparation, and it seems both useful and necessary to peg these not to the production sector alone, but to the company as a holistic system.
- The second coordination instrument of self-determination through intensive horizontal communication between colleagues suffers in decentralized work to the extent that direct contacts are only possible on a reduced scale. Reciprocal coordination is limited to the material side of the task at hand, whereas its implementation requires autonomous organization. The preferred expression “self-organization” should bring out the fact that teleworkers are to a large extent left to themselves; they therefore need a fair quantum of discipline and also the skill to apportion their work content- and timewise.
- Third, the further development of teleprocesses necessitates an increased input from methodology and tools. This exigency results from the professionalization amassed in the course of developing software technology and from the necessity, accruing from decentralized work, of deploying other coordination options than face-to-face conversation. Self-organization and “**engineering**” between them enable the largely independent implementation even of complicated job segments, as well as their material and temporal integration with other job segments into usable results.
- Telemanagement - this emerges from the preceding - is distinguished by the way in which carefully planned job segments can be outsourced for independent implementation. Then there is a fourth point, namely the specific mode of supervision and control. The coordination instrument of the personal directive indeed recedes, to be replaced by result-oriented **performance monitoring**.
In place of personal impressions, such as are amassed more or less randomly in the course of day-to-day team efforts, are now the job solutions themselves or mere entries in work journals or weekly reports. These also serve as the basis for remunerating teleworkers.
- The result-oriented management style in teleprocesses will become no less successful than centralized work processes. The outcomes may indeed be better in all those cases where particular precision and deadline fidelity are necessities. But there will be **deficits on the personnel level**; for many

people derive their motivation from working together with others. Precisely that, however, will recede in importance timewise. Many teleworkers fear, prompted by their out-of-office presence and the absence of regular face-to-face contacts, that they will be passed over for promotions and tokens of recognition and are therefore frustrated.⁵

In fact the bounds of detachment lie less in the economic sector, let alone in the technical one. Even outcome-oriented people, those predominantly motivated by job content, need to feel occasionally a bit of warmth from the office environs.

In the rejection of teleprocesses, with special reference to telework, there is also a misunderstanding. For it cannot be expected that all offices will vanish in the wake of procedural innovation. Rather they will be progressively diminished and alter their character from that of workplace to communication focus.⁶ Another - and fifth - feature of telemanagement is therefore motivating teleworkers through regular personal meetings in smaller and larger groups. Such encounters must be regularly arranged, so that those tied into teleprocesses will in future retain the opportunity to get to know others and to communicate on a face-to-face level.

4.2 Tele-Leadership

The personal encounter is also - and nowhere more so than in the information age - pivotal for successful liaison between workers and managers. It is at once the basis of any lived-out corporate culture and the guarantor that the trend to virtualization inherent in IT can be overcome. Anyone whose sole communication with others is by email may not be intellectually isolated, but he will be emotionally and risks missing out on the fullness of reality.

We must head off this danger of social isolation and bring people together again. Leadership in the IT era should begin by encouraging personal contacts between people, whether in companies, in politics, or in education - indeed wherever people get together, not excepting the global markets.

- The first task confronting management is that of **moderation**. To an extent it discharges a "midwife" function: by helping a group of people to understand themselves, to formulate their wishes and desires, to come up with solutions and assure their implementation. By bringing people together and providing a positive communicative venue, the moderator gives rise to

⁵ Ibid., p. 194ff.

⁶ Ibid., p. 304ff.

a new culture of cooperation, one in which the corporate ties are diversely entwined with supra-corporate realities. In the new network of relationships, individuals will use new media to communicate with new colleagues and friends; they will both wish and be able to participate in shaping the new world along responsible lines.

- Assuming the role of moderator turns a manager into a leader, exerting a goal-directed influence on people's behavior. Do we really still need such influence in an IT society characterized by telecooperation?
Will telecooperation in fact replace telemanagement?

To this the answer is a unequivocal "no", for clear **decision making** is also needed, especially given the likely "labor pains" resulting from the reorganisation of workers' lives, notwithstanding the necessity and desirability of good cooperation teamwork. Almost nothing of importance decides itself, and what isn't decided goes on festering until the damage is done, following its own more or less stormy course. The key task of leadership is to make the right decisions at the right time. Hence, management is also crucial for teleprocesses, indeed especially for these.

The cooperative approach stems from the pen of theoreticians and generalizes the construct of transactional analysis. It isn't entirely wrong however as it opposes, overtly or tacitly, the situationally inappropriate use of power. The decisionmaker's power should be exercised impartially though. And it should be goal-oriented too, neither undirected nor arbitrary.

- The question of setting **objectives** should be uppermost in all analyses of how the IT society should be shaped.

In fact, it is almost always pushed aside by everyday events. To be sure, managers and politicians shape our world more or less as a social market economy and success seems to prove them right, for never was mankind so prosperous as at the close of the 20th century.

IT has indeed brought fundamental change to our working and productive lives, setting free in the process enormous rationalization energies. From this development the whole world has benefited in terms of hugely boosted living standards. However to a highly varying extent, for despite all progress there is still, and particularly now, a great deal of poverty and misery in the world.

On the one hand, we have not achieved a "just" distribution of created wealth; on the other, rationalization and automation have liberated great **productive energies**, meaning that today fewer people than ever have to be employed to produce marketable products. In other words, machines and IT facilities have made redundant millions of workers, and these cannot be employed if one is not to act "uneconomically". Yet no one can want to act this way, no manager and certainly no politician.

The consequences of **unemployment**, or the loss of productive activity, are well-known and cannot be detailed here. However it is clear that they are not only economic in kind. Rather the loss of work carries with it the loss of the work ethic, such as has characterized the West for centuries.

What will replace it?

5. The vision of a humane utilization of IT

The "Foundation for a Humane Utilization of IT"⁷ that I have established has set itself the task of finding answers to these questions, thus contributing to the amelioration of our lives. The foundation's charter is to promote and implement research projects, educational facilities, hands-on projects for a humane utilization of IT in work, education, health, art and culture, with special reference to a humane shaping of our working and productive lives. Here the following points need to be made.

5.1 Redrawing global economic guidelines

Today's economic realities are predominantly driven by the profit motive, with social goals, even in Germany, again receding into the background. Spectacular business mergers apparently pursue the goal of rationalizing corporate processes even further in the interests of **shareholder value**. That jobs are lost is taken in one's stride and justified in terms of the global forces of competition. Thus the economy grows more efficient and the individual jobholder more dependent. Economic activity should however benefit everyone; profit should no longer be an end in itself, but a means to the goal of enhanced living standards for all. To achieve this, guidelines - transcending the corporate goals proper - for worldwide economic activity must be defined and enforced by the community of nations.

⁷ www.integrata-stiftung.de

The foundation considers one of its core tasks to be providing a stream of telling contributions on this matter.

5.2 Global distribution of work and wealth

The prime global economic goal today is to create working and productive strategies for all. IT is making, for all its rationalization effects, a considerable contribution in terms of fulfilling old communicative desires and **instilling new needs** for information, communication, security and health, as well as for many other segments of life. This induces economic growth and leads, if increased need requires more work input than productivity generates, to higher employment rates.

Instilling needs, however, is not the only way to improve the job market. The world currently has a tremendous **backlog of need** for goods essential to survival, ranging from food staples to decent habitation. To meet this need adequately, the primary goal must be a global economic policy. This can only be achieved if in future, apart from production, distribution is put at the heart of economic activity. The best way to distribute the world's wealth is to distribute its work equitably. Work must be taken to people, and not vice versa. When all can live from the fruits of their labor, the problem of goods distribution will have been solved.

5.3 Enhancing the quality of life for all

Finally speaking, achieving a "just" distribution of **work** and wealth is not enough. We know today that poverty and happiness sit more readily together than do wealth and contentment. Whether distributing surpluses to the poor will increase the happiness of the greater number can seriously be doubted. But it is possible to alleviate privation and it is a claim on our humanity.

But it is not material privation alone that must be eliminated. To confer on all human life the quality of humanity, of humaneness, great **educational** efforts need to be made. An educated person will not only grow in his personality; he will also be able to make a greater contribution to removing privation. Most people, however, attach even more importance to their **health**, and they are right to do so. Health must be preserved above all else and promoted. Healthy, educated people free from economic privation - this must be the highest global goal pursued by the community of nations. Only when this is done will **art** and science really come into their own and flourish, creating a **world culture** serving humane ideals in the true sense of the word.

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